S1000D BASIC TRAINING

UNDERSTANDING ISSUE 4.0 OF S1000D

(The international specification for technical publications utilizing a common source database)

PROVIDED BY LOGSA FOR THE U.S. ARMY

S1000D basic TRAINING

Welcome to your S1000D training!

Please note that this is NOT a TRADOC training course.
LOGSA is providing this material to introduce Army personnel to S1000D.

Module 1

TRAINING OVERVIEW

S1000D TRAINING

- Two types of people are receiving this training:
  - those responsible for procuring technical manuals
  - those responsible for producing technical manuals
- This training course will get everyone familiar with applicable concepts and comfortable with using S1000D
- This training will use a combination of classroom presentation, training guide, and exercise completion.
- This training material is designed to provide introductory and beginner information first before going deeper into more advanced topics.

MODULES 1, 2, AND 3
(SUMMARY, INTRODUCTION TO S1000D, AND THE ESSENTIALS)

- ***Module 1: Training Overview.*** **This module provides an overview of the training. It is an introduction, with some explanation of the different modules, their contents, and their objectives.**
- ***Module 2: Introduction to S1000D.*** **What this international standard consists of, how it evolved, and how/when this approach may be beneficial.**
- ***Module 3: The Essentials: the Common Source Database and the Data Module.*** **The real meat begins here. These are the essential concepts underlying the modular, electronic database approach to documentation.**

Some modules have exercises to help prepare you for real life!

MODULES 4 THROUGH 6 (THE HEAVY STUFF)

- ***Module 4: Layered Decisions: the Business Rules.*** **One feature of S1000D is that it is designed to be tailored. All decision points related to a particular document are addressed through Business Rules (BRs) that become part of the contract. This section describes how they work, and it introduces all the levels of applicable rules: S1000D, Joint Service, Army, and project-specific.**
- ***Module 5: S1000D and the Acquisition Process.*** **Content selection matrices and a functionality matrix (for Interactive Electronic Technical Publications (IETP), the S1000D term for IETM) are used to specify most of the document's characteristics. This module describes the matrix and its use; it also reviews the changes in what goes into the Technical Manual Contract Requirements package, what the contractor deliverables are, and which standards and policies apply.**
- ***Module 6: The Change Process.*** **The processes to suggest changes to S1000D and MIL-STD-3031 are explained.**

Module 2

INTRODUCTION TO S1000D

MODULE 2: INTRODUCTION TO S1000D

- **S1000D is an international specification for standardizing the acquisition and production of technical publications.**
- **S1000D is designed to be readily tailored to support any type of equipment, military or civil, anywhere.**
- **With S1000D, all information for a publication is stored in the form of individual, coded electronic modules (similar to work packages) in a database.**
- **Data is generated in a non-proprietary, neutral format, so it can be used by (and viewed on) many different systems.**
- **A Publication Module specifies the order in which those modules will appear in a publication (paper or Interactive Electronic Technical Publication(IETP)).**
- **The Data Modules (DMs) are produced in accordance with strict structural rules (schemas) and are marked up in XML.**

S1000D'S PEDIGREE

- **S1000D was initially developed by the European Association for Aerospace Industries, now the AeroSpace and Defence Industries Association of Europe (ASD) , because existing countries' specifications were so varied.**
- **The current "harmonized" specification is jointly produced by ASD, the Aerospace Industries Association (AIA), and the Air Transport Association (ATA). AIA is represented by the United States S1000D Management Group (USSMG).**
- **The international S1000D Steering Committee proposes documentation standards and modifications to be agreed on by the participating nations.**
- **The Steering Committee maintains S1000D and works with technical specialists to keep up with technological changes – e.g., making sure S1000D requirements harmonize with those of the Shareable Content Object Reference Model (SCORM) to support training content.**

S1000D AND THE ARMY

- **The Army has been involved with the development and sustainment of S1000D (through the Land Working Group (WG)) since 2006.**
- **The Army sponsored S1000D change proposals that were incorporated into Issue 4.0 to ensure that S1000D satisfies Army requirements.**
- **S1000D and MIL-STD-40051 are both approved and acceptable technical data standards available for use in the Army.**
- **Any Army program developing S1000D data must also be in compliance with the business rules defined in MIL-STD-3031.**
- **MIL-STD-3031 contains the business rules for tailoring S1000D for Army programs.**

NEW TERMINOLOGY

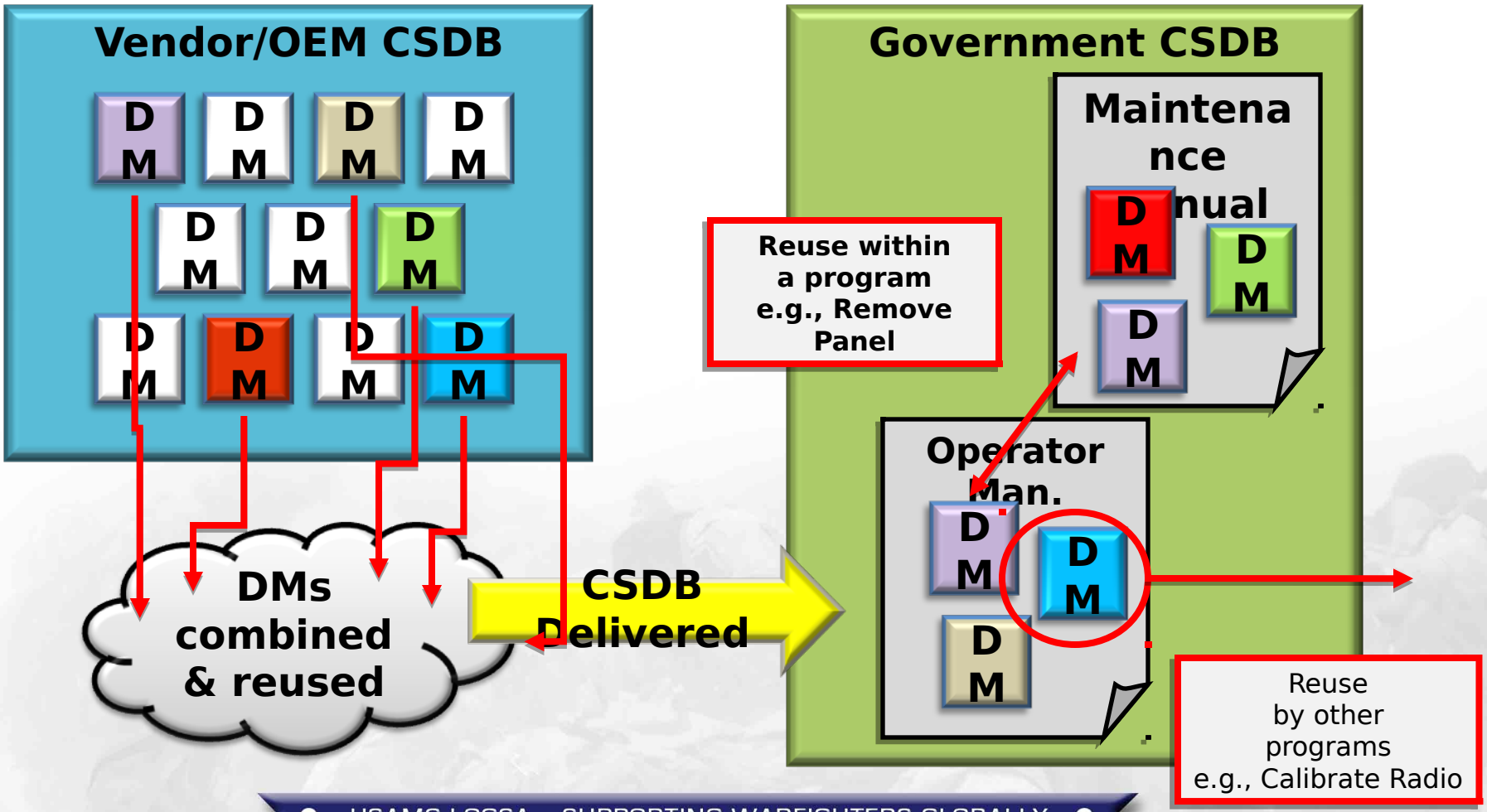
S1000D Term	Army Term	Definition
applicability	effectivity	The state or condition when associated data is valid (i.e., applying to a certain configuration, model, or even environmental condition). Applicability may also be used to describe how data modules pertain to different customers for delivery. The term “effectivity” is not used by S1000D.
illustrated parts data	parts list, illustrated parts catalog, or RPSTL	Data modules that contain repair parts and special tools information.
information set	Content requirement	Information sets define content requirements. Information set requirements can be collected together to provide an author with content requirements for a subset of data to be authored or an entire publication.
Interactive Electronic Technical Publication (IETP).	Interactive Electronic Technical Manual (IETM)	The interactive presentation of data modules that are displayed on screen and are not page formatted.
product	Materiel or end item	The equipment or materiel that is the primary subject of the technical data. This is used in lieu of terms like “aircraft,” “vehicle,” or “ship” since S1000D can apply to air, land, or sea products.
first verification and second verification	validation and verification	The terms first and second verification are used in S1000D and have the same corresponding meanings as validation and verification, respectively.
publication	Technical Manual (TM) or IETM	A publication refers to the presentation of data modules regardless of its output format (e.g., screen or paper).
reset area	guidepost	The reset area is a part of the Interactive Electronic Technical Publication (IETP) viewing area that contains access to functionality such as the ability to return the IETP view back to its

A MODULAR APPROACH

- **All DMs that apply to a product are gathered and managed in the Common Source DataBase (CSDB) for that product. (With S1000D, the CSDB can be a Windows directory structure or a more complex collection of distributed databases.) Note: A CSDB is not a content management system but rather a set of tools for managing source data.**
- **An individual Data Module (DM) exists in only one location in the CSDB. It can be referenced and (re)used as many times as a Publication Module calls for it.**
- **During the publication process, a DM can be imported into a page-based document or an electronic publication like an Interactive Electronic Technical Publication (IETP).**
- **Keeping information current and correct is easier: Whenever a module is updated the latest version is available to end users. (The older version remains available in the authoring environment.)**
- **The writing in a module needs to be simple and stand alone, so it can be reused in other contexts.**

A modular approach takes more work at the start, but it may pay off when you get to reuse the modules!

Data Module (DM) Reuse



DATA MODULES (DMs): THE CSDB BUILDING BLOCKS

- **A DM is the smallest self-contained information unit within a technical publication. It is comparable to an Army work package.**
- **Data modules all have two parts as follows:**
  1. An identification and status section that contains all the information (metadata) needed to manage the module and the data contained in it.
  2. A content section that varies with the schema that applies to the type of DM chosen. The most common DM content types for the Army will be: Descriptive, Procedural, Crew, Fault, Illustrated parts data, and Maintenance checklists. Other DMs also deal with Business Rules (BRs), change packages, and DM management.
- **The Common Source DataBase (CSDB) (remember that this can be just a directory) also stores other types of information objects, such as illustrations and publication modules.**

WHY PROGRAMS ARE CHOOSING S1000D

- Potential cost savings on writing and publishing (less duplication of effort)
- Potential for reduced information maintenance costs (lower volume of data)
- Uniform standards for all project participants (especially helpful for collaborative projects, such as multiservice programs)
- Subsets of information can be generated to meet specific user needs
- Standard format for future data exchanges
- Designed for flexibility and tailoring to suit different uses
- Designed for integration with other international data standards, such as Logistics Support Analysis Record (LSAR)
- Enhanced interoperability; information/output can be transferred among disparate Information Technology systems, and automated transfer can be set up
- Internationally agreed-on standards allow neutral management/delivery of uniform base data, with output form to be chosen by user
- Data-module concept can be applied to legacy data
- Improved clarity and easier/cheaper translation (if Simplified Technical English is used)
- Many of the commercial TM development tools available now support S1000D but must have a certificate of networthiness to be used on Army systems.

WHY THE ARMY IS IMPLEMENTING S1000D POLICIES

- **Some programs want to be able to use S1000D, for the reasons given earlier (as well as foreign military sales and a growing preference for Interactive Electronic Technical Publications (IETPs)).**
- **DOD and the Joint Services have already defined Business Rules (BRs) for use with S1000D, and the other Services have a number of programs using S1000D.**
- **Tailoring through Army-specific S1000D BRs will enable programs to implement S1000D effectively while successfully meeting all Army and Joint Service requirements.**

S1000D is not mandated. It is only an option.

MAIN CHANGES YOU WILL SEE WITH S1000D

In the acquisition process:

- **All project stakeholders must agree to a set of Business Rules (BRs), implemented at a number of levels, that specify almost all possible decisions about the document and its contents. The Joint Services and the Army have tailored a set of BRs, and each project needs to do the same.**
- **The BRs are formalized in a way that the vendor and the government (and all stakeholders) have a clear understanding of expectations**
- **List of deliverables is different**
  - **CSDB Status List (CSL), Business Rules Exchange (BREX), Data Modules (DMs), Data Dispatch Notes (DDN), etc.**

In the writing process:

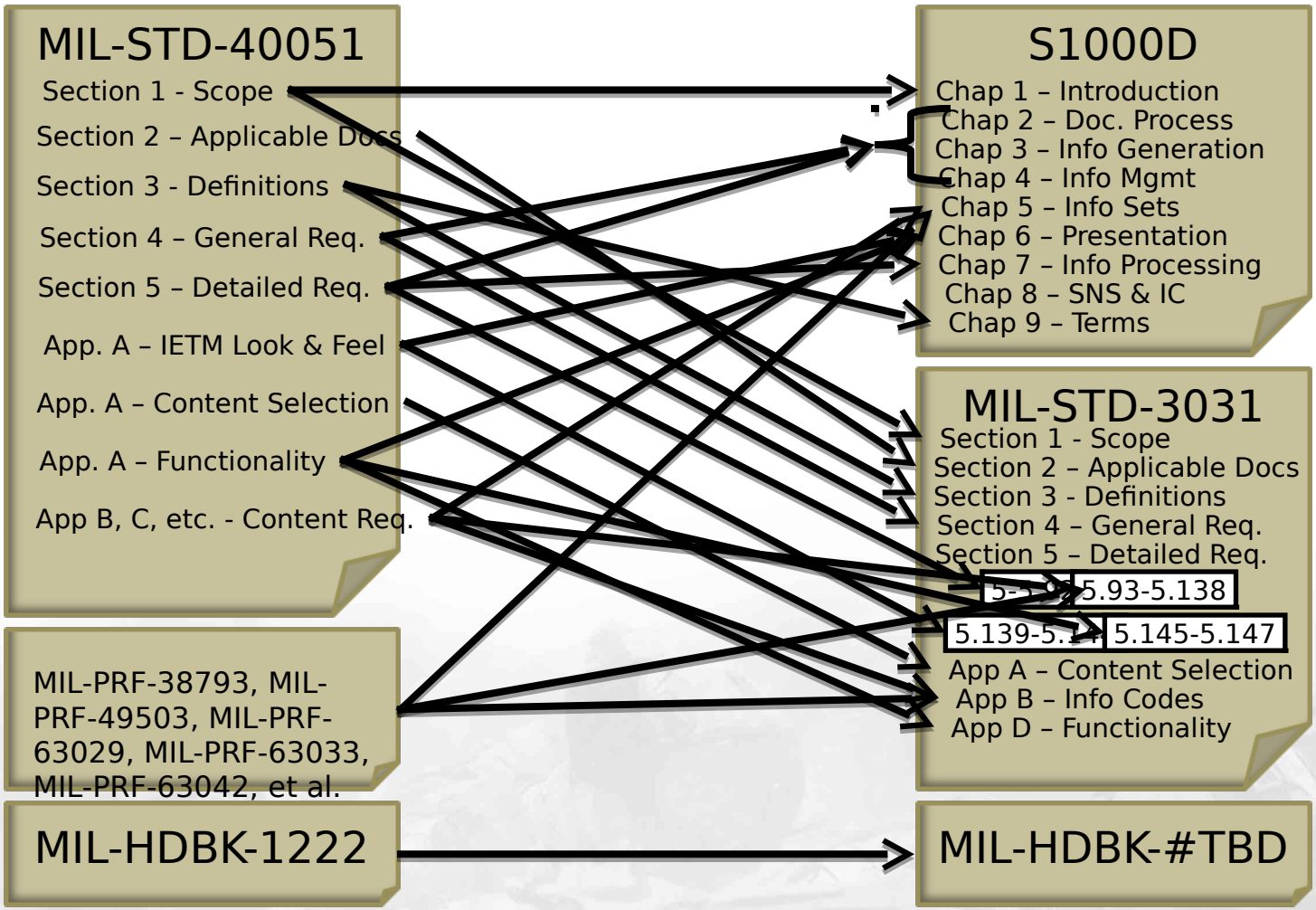
- **The sequence of a document's parts is independent of the content – the publication and process modules determine the presentation and production. Authors focus solely on content.**
- **Authors should write content with DM reuse in mind.**
- **Technical authors should be involved in the BR development process. Note: As many of the project BRs as possible should be decided prior to contract award. Any remaining project BRs should be decided at the start of work meeting.**
- **Technical authors have a new standard to consider. The size can be daunting. See next slide…**

S1000D project stakeholders: PM, LCMC, OEM vendors & subs, equipment specialists, LOGSA, TRADOC, etc.

KEEP IN MIND WHEN YOU START USING S1000D…

- **S1000D needs to be tailored for every project. Business rules (BRs) documenting the desired tailoring will be part of the contract. The process is more formalized in S1000D.**
- **The applicable BRs and requirements are at several levels: S1000D, Joint Services, Army, and project. All of them are essential to using S1000D effectively. Contractors, Life Cycle Management Command (LCMC) Equipment Publication Control Officer (EPCO), and LOGSA will work with the project to determine the BR details, make recommendations on the project-specific decisions, and frame the related BRs.**
- **As part of the process of defining the project-specific BRs, projects also need to define conventions for some elements, usage, and terms so everyone has a common understanding.**
- **S1000D provides schemas for developing the content of each type of DM. The schemas cannot be changed because changes will not comply with Army requirements; and the data will not work in S1000D tools (e.g., viewers, styles sheets, publishers) nor will the data interchange with other programs or uses.**
- **Changes to S1000D or its schemas can be made only through a formal request that requires Land Working Group (i.e., Army), USSMG, and international approval.**
- **People writing S1000D manuals will become very familiar with Chapters 3, 4, and 6. Both authors and acquisitions professionals will also use MIL-STD-3031, which provides Army-specific content selection tables and information codes.**

S1000D/MIL-STD-3031 Addresses the Same Scope as Standards You Already Know



USING THE FULL SPECIFICATION

- **S1000D covers all aspects of technical publication activities in support of any platform, system, or equipment project. Fortunately, most of S1000D's pages will be used simply for reference.**
- **Each Chapter has sub-Chapters (and often sub-sub-Chapters) in a standard format that includes appropriate elements, attributes, markup guidance (with examples) and the relevant BRs. Decisions on those BRs are documented in MIL-STD-3031 and the project BR matrix.**
- **Note that Chapter 5 has been almost totally replaced. The Army has defined new information sets documented in MIL-STD-3031 that better suit its needs.**
- **S1000D's nine Chapters are as follows:**

Chapter	Topic	Contents
1	**Introduction to the specification**	General information: scope of the specification, how to use it, and change requests.
2	**Documentation process**	Overview of the documentation process, including the use of IT and the relation to other processes and specs such as ASD S2000M and Product Life Cycle Support (PLCS) (ISO 10303 AP239). The concept of the tailoring process (BRs) is covered by Chapter 2.

THE FULL SPECIFICATION (cont.)

Chapter	Topic	Contents
3	**Information generation**	General rules of writing for technical publications to be produced on the basis of DMs and CSDB concepts (mostly for authors and illustrators). (A publication is defined as a user's view of information compiled and published for a customer. It may be an IETP or a page-based publication compiled from DMs or a publication with legacy data.) Chapter sections are: 3.2: Basic structure of the DMs. 3.3: Use of the information sets that establish the required information scope and the DM coding strategy. (An information set is an author's view of the information required, of defined scope and depth, for a DM to be managed in the CSDB.) **The Army has its own content-selection tables for various types of documents.** 3.4: Rules for zoning and access. 3.5: Updating DMs. 3.6: Rules for the protective marking of DMs (e.g., which element reflects security classification) 3.7. Details of the quality assurance procedures used during module/publication development and updated to ensure that the contents are adequate and technically accurate. 3.8: Rules for modular disassembly/breakdown of equipments. 3.9: Structural rules for DM production, together with authoring rules for writing, illustrations, and multimedia (including components like front matter, warnings, and notes). This section is 1000 pages of useful information for authors!

THE FULL SPECIFICATION (cont.)

Chapter	Topic	Contents
4	**Information management**	Oriented towards managing data for publication, this Chapter covers the DM structure, rules for interchange of DMs, document type definition, and rules for updating of DMs so that common technical documentation can be produced. Sections are: 4.2: Addressing, storing, and handling information objects such as DMs, illustrations, and publications, including information needed to establish the CSDB. 4.3: Details about the coding of DMs. 4.4: The illustrations and multimedia information associated with DMs. 4.5: Data Module Lists (DMLs) used for managing CSDB content. 4.6: Handling comments on DMs and publications. 4.7: Version control. 4.8: Interchange of DMs. 4.9: Using the publication module and SCORM content packages to define, prepare, and manage publications and learning content generated from DMs. 4.10: The Business Rules EXchange (BREX) mechanism. 4.11: Use of the process DM. 4.12: Master-customized concept for managing a multi-customer environment. 4.13: Optimizing and reusing data. Includes how significant data within a DM are handled, a mechanism for grouping properties related to different technical information types, and a production management mechanism for associating modules representing the same data with different product configurations. 4.14: Applicability model and the three cross-reference tables. Can support either static output or dynamic output filtered for a particular product configuration.

THE FULL SPECIFICATION (cont.)

Chapter	Topic	Contents
5	**Information sets and publications**	Presents the common and specific requirements for the information sets and publications necessary to operate and maintain a given product. Supports publication procurement and management as well as authors and illustrators. **For the Army, this material is largely superseded by MIL-STD-3031.**
6	**Information presentation /use**	Also supports publication procurement and management as well as IT specialists. Includes: 6.2: Rules for page-oriented publications. 6.3: Rules for IETPs. 6.4: Functionality matrix for page-oriented publications as well as non-linear display of information. **For the Army, this material is superseded by MIL-STD-3031.**
7	**Information Processing**	Technical aspects of the schemas, graphics/notations, information interchange, resources, and software requirements. Software-oriented.
8	**Standard Numbering Systems, Information Codes, and Learn Codes**	Describes the common Standard Numbering Systems (SNSs), Information Codes (ICs), and learning/training codes used in the DM code. 8.2: Set of SNSs maintained by S1000D for air vehicles, engines and equipment, tactical missiles, and general land/sea support equipment. 8.3: Examples of each of the above, possibly useful for Army application. 8.4: ICs for the above. **The Army has added to the IC listings, so this material has been replaced by the listings in MIL-STD-3031.** 8.5: Codes related to training and learning.
9	**Terms and Data Dictionary**	9.2: Glossary of the terms, abbreviations, and acronyms used. 9.3: Definitions of the XML data elements.

Module 3

THE ESSENTIALS: DATA MODULES (DMs) AND OTHER COMMON SOURCE DATABASE (CSDB) OBJECTS

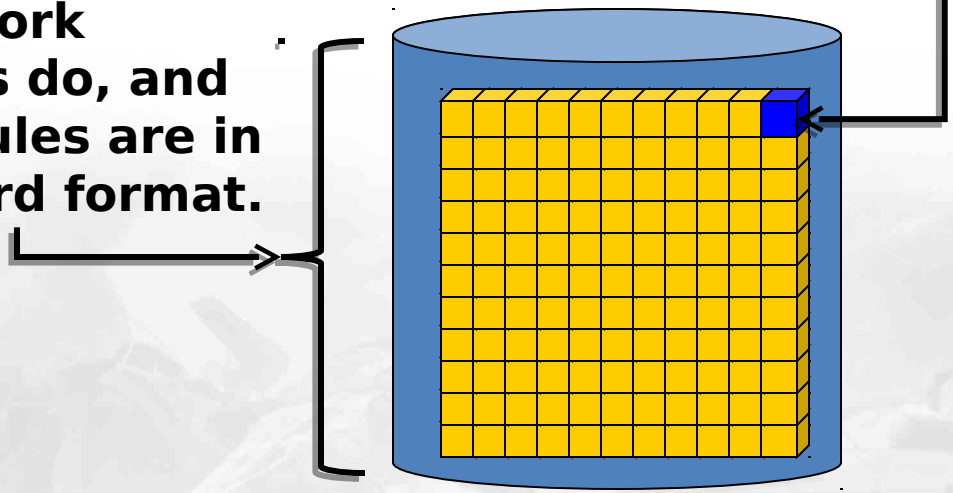
MODULE 3: THE ESSENTIALS: DMs and Other CSDB Objects

CSDB

The CSDB stores all the information for the publication. The chunks of data reflect a specified outline, just as work packages do, and the modules are in a standard format.

Data Modules (DMs)

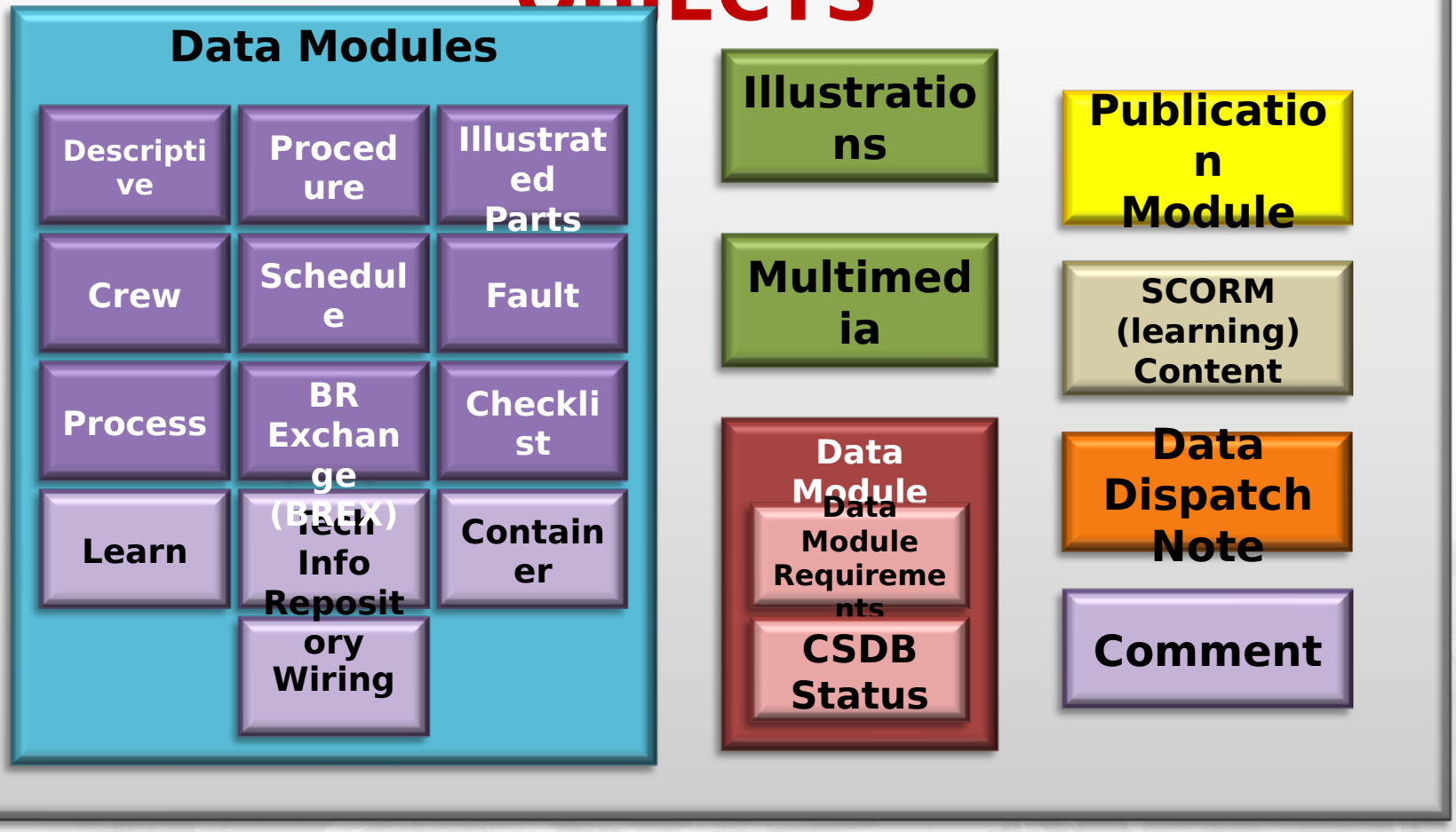
The DMs are the smallest self-contained units of information in a publication. Each one is unique and may be re-used as often as needed.



Data Module Code (DMC)

The multi-part DMC enables each DM to be uniquely identified, retrieved, used, and managed appropriately for the particular publication.

Common Source DataBase (CSDB) OBJECTS



DATA MODULES (DMs)

- **Each DM contains one topic or procedure related to the equipment. The DM schema type will vary depending on the content. The most common DMs schema types for an Army TM are Descriptive, Procedural, Fault, Crew, Illustrated Parts Data (IPD), Publication, and Maintenance Checklists.**
- **The amount of data in a single DM is dictated by the equipment breakdown (Standard Numbering System (SNS)) and the procedure or topic to be covered (as dictated by the content selection matrix and the Information Codes (ICs)).**
  - Required content is found in the content selection matrix appropriate for the type of manual
  - The SNS provides the equipment breakdown that identifies the part of the product to which the DM applies
  - The ICs, provided in the content selection matrix, identify the topic of the DM (e.g., “Lubrication”)

DATA MODULE (DM) STRUCTURE

- **All DMs use the same basic two-section structure. The first section contains identification and status information (metadata), and the second contains the content presented to a user.**

- **The identification and status section makes it possible to uniquely identify the DM and manage it in the Common Source DataBase (CSDB). Besides Data Module Code (DMC), name, and issue information, it includes the module's classification, applicability (same as Army effectivity), originator, reason for update, QA status, distribution, export control, destruction, and handling.**

- **The content section is specific to the type of DM selected (see the following list of types). The schema for that type of module determines the elements and attributes to be used in choosing the content and authoring it in XML.**

IDSTATUS :

This is the metadata. The ID part includes DM ID and address items. The status part accommodates possible types of information about the D

CONTENT :

This is what the user sees. The DM contents vary w the type of modul All DMs are structured in accord with a set of common constructs

DM Schema Types

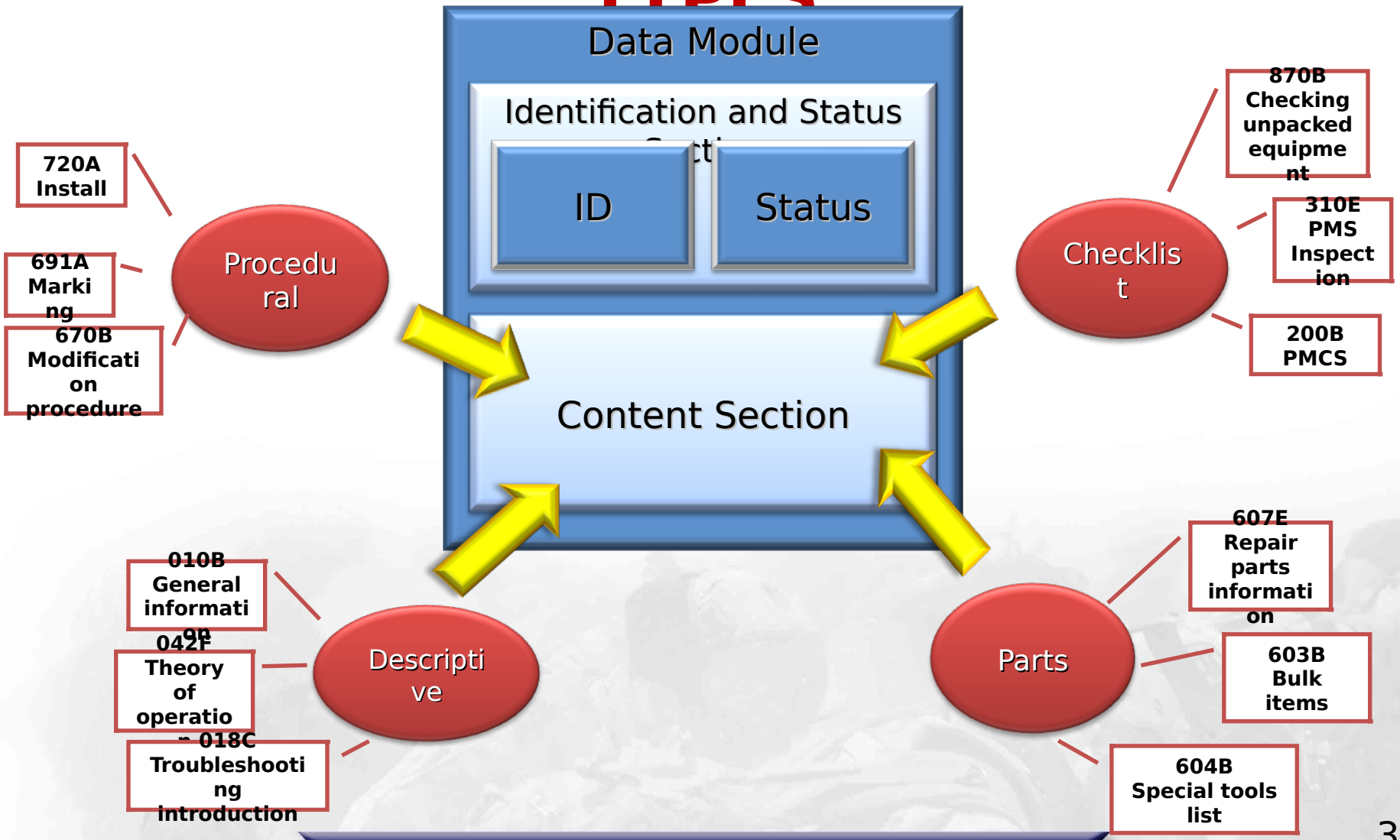
- **Descriptive.** For General Information, Theory of Operation, some Supporting information (e.g., COEI, BII), Army Wiring Diagrams, and many other types of content.
- **Procedural.** For procedural tasks.
- **Fault.** For troubleshooting.
- **Maintenance planning.** For Maintenance Allocation Charts (MACs).
- **Crew.** For Operator information.
- **Illustrated parts data**. For illustrated parts lists and special tools lists.
- **Process.** For sequencing other DMs or steps in an Interactive Electronic Publication (IETP).
- **Learn.** For training material to be presented in accordance with SCORM. (There is no Army policy regarding the Learn DM type.)
- **Maintenance checklists.** For maintenance, service, or inspection checklists.

Although the Army will typically not be using them, S1000D includes schemas for two types of wiring-related DMs:

Wiring data. ***Wire, harness, and equipment data.***

Wiring description. ***Information about the wiring, such as layout, access, and maintenance.***

CONTENT DATA MODULE (DM) TYPES



OTHER COMMON SOURCE DATABASE (CSDB) OBJECTS

- **Business Rules EXchange (BREX). The BREX file encodes all the machine-readable BRs applicable to a project or organization.**
  - **Required**
- **DM Lists. Used to identify the Data Modules (DMs) required for a project (Data Module Requirements List (DMRL)) and the status of DMs in the production process (CSDB Status List (CSL)).**
  - **Required**
- **Technical information repository. This is used to manage data external to and referenced by a DM**
  - **Not required**
  - **Cannot be part of delivered data intended for maintainer/operator use**
  - **Can be used for internal authoring environment**
- **Container. For associating several DMs that represent different versions of the same data.**
  - **Not required**
- **Cross-reference tables. Used to manage the applicability of DMs based on equipment attributes or conditions.**
  - **Must be used when there are applicability requirements – no Army Business Rules (BRs) written yet**
- **Comment. Can be used to report errors and recommended improvements in the technical data via DA Form 2028 or for use in the IPR process.**
- **Data Dispatch Notes (DDNs). Used to list the items included in a delivery of data, like a manifest.**

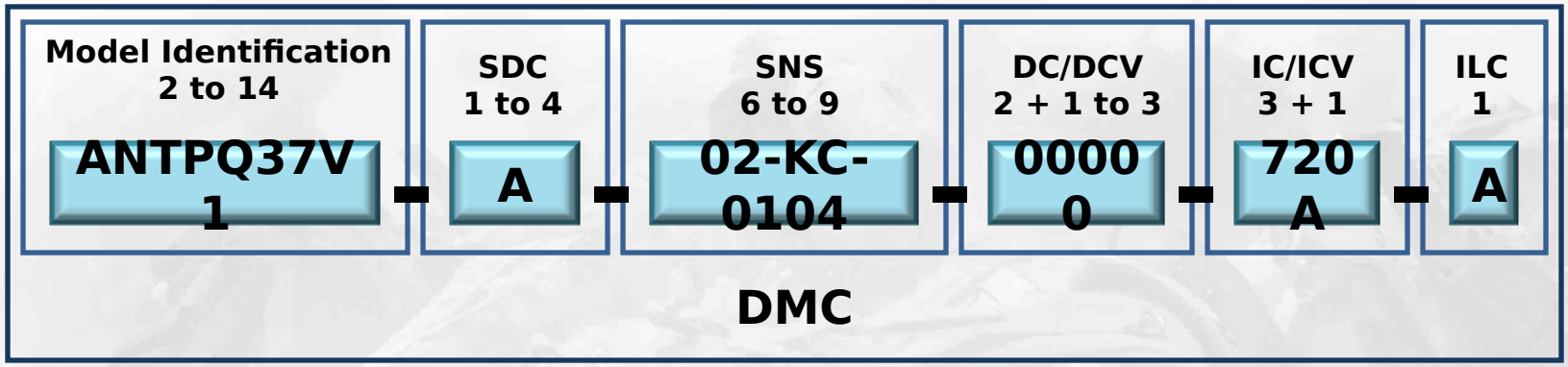
DATA MODULE (DM) SCHEMA TYPES

DATA MODULES	SCHEMAS
Descriptive	descript.xsd
Procedural	proced.xsd
Illustrated Parts Data (IPD)	ipd.xsd
Fault	fault.xsd
Learning	learning.xsd
Maintenance Planning	schedul.xsd
Maintenance Checklists & Inspections	checklist.xsd
Crew	crew.xsd
Process	process.xsd
Training	scormcontent package.xsd
Container	container.xsd
Applicability Cross-reference	appliccrossref table.xsd

DATA MODULES	SCHEMAS
Conditional Cross-reference	condcrossref table.xsd
Product Cross-reference	prdcrossref table.xsd
Technical Repository	techrep.xsd
Business Rules Exchange (BREX)	brex.xsd
Wiring Description	wrngflds.xsd
Wiring Data	wrngdata.xsd
OTHER INFORMATION OBJECTS	**SCHEMAS**
(Illustrations & multimedia objects)	
Publication Module	pm.xsd
Comment	comment.xsd
Data Dispatch Note (DDN)	ddn.xsd
Data Module Lists (DML)	dml.xsd

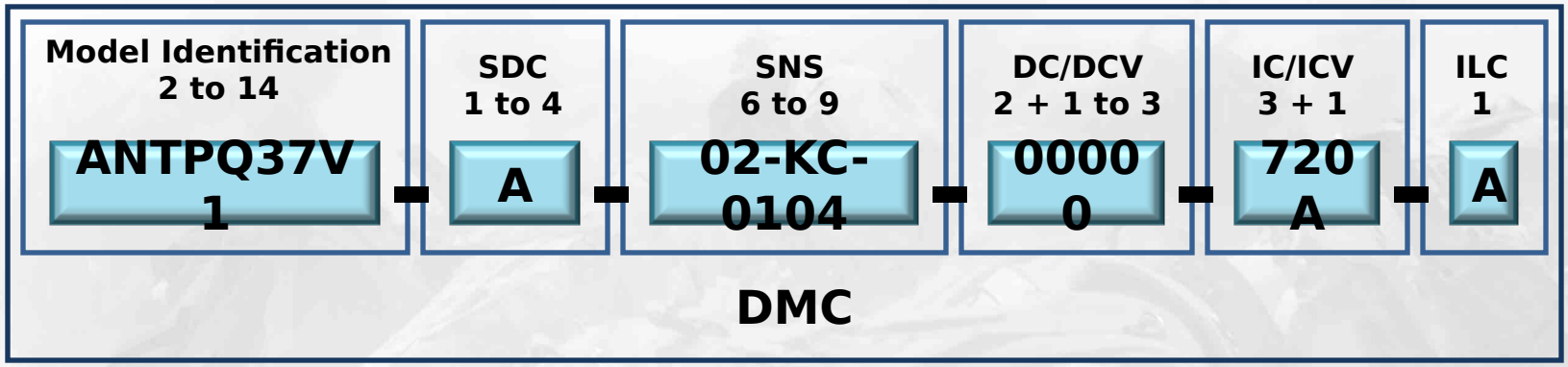
THE DATA MODULE CODE (DMC)

- The DMC is used with the metadata in the identification and status section described previously to manage, retrieve, or access the DMs in the Common Source DataBase (CSDB). (Illustrations/multimedia have a similar code.)
- The DMC's structure is standardized. It is partitioned into three parts: "hardware identification," "information type," and "learn type." (Learn type is optional and only used with training DMs and is typically not used by Army pubs. Consult with TRADOC if used)
- The lengths of the DMC's individual components may vary; the whole DMC can be anywhere from 17 to 41 alphanumeric characters long.



THE MODEL IDENTIFICATION (MI) CODE

- **The MI is important because it makes all project Data Module Codes (DMCs) universally unique.**
  - **The MI must be registered with NATO Maintenance and Supply Agency (NAMSA) (http://www.namsa.nato.int/s2000m/s2000m_moi14_e.htm).**
  - **Projects must also notify LOGSA of all registered MIs.**
- **Normally, a project has a single MI. However, platform-level publications may use Data Modules (DMs) that refer to other MIs, allowing the use of existing DMs as is.**
- **In the example below, the MI (ANTPQ37V1) is for the PM RADARs ANTPQ model 37 ground radar system.**

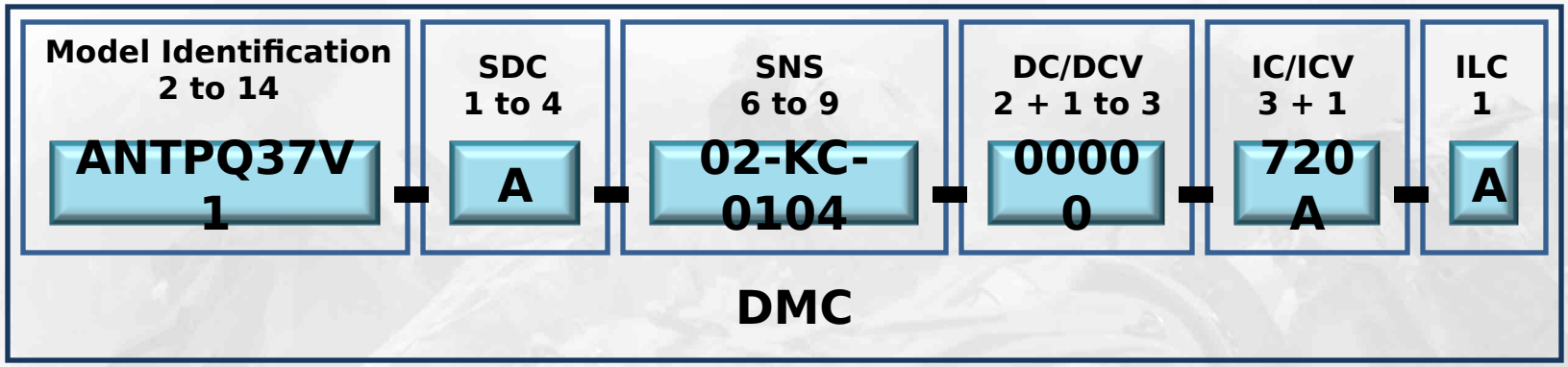


PROCESS FOR REGISTERING MODEL IDENTIFICATION (MI) CODES

1. **Send e-mail requesting registration to: spec2000m@namsa.nato.int.**
   - E-mail should include the following:
     - **Codes needed and brief description for each and the product the codes will be used for**
     - **Contact information including name, title, phone, address, FAX, and e-mail.**
2. **When registration confirmation is received, notify LOGSA via email and identify the registered codes.**
   - LOGSA wants to keep track of all codes used by the Army.

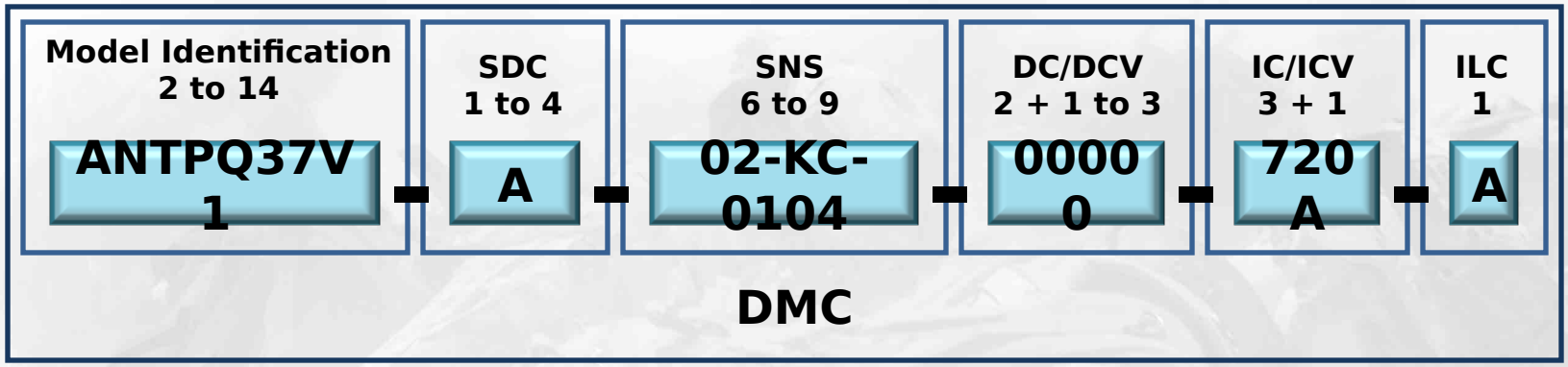
SYSTEM DIFFERENCE CODE (SDC)

- **The SDC is used to identify alternate versions of a system or subsystem identified by the Standard Numbering System (SNS)**
  - A is used as the first or default version (first version/base model)
- **In the example below, the SDC (A) indicates that this is a Data Module Code (DMC) for the default version of the equipment.**



STANDARD NUMBERING SYSTEM (SNS)

- **The SNS is used to identify the specific system, subsystem, and component or assembly to which the Data Module (DM) pertains**
- **The equipment breakdown used in Army SNS must be the same as the breakdown used for the equipment's Functional Group Code (FGC)**
  - This ensures consistency between maintenance, parts, and MAC data
- **In the example below, the SNS (02-KC-0104) indicates that this DM has to do with a speaker power cable (FGC 0210020104).**



A Closer Look:

Standard Numbering System (SNS)

Standard Numbering System (SNS)

- The SNS consists of four segments:
  - **system**
  - **subsystem**
  - **sub-subsystem**
  - **and unit/assembly.**
- These segments identify the equipment breakdown.
- The SNS is used in the same way a Functional Group Code (FGC) identifies:
  - **a particular system**
  - **subsystem**
  - **component/assembly**
  - **or part of the system or equipment (e.g., an engine).**

Functional Group Codes (FGCs)

- An FGC is used for development of Maintenance Allocation Charts (MACs), narrative technical manuals, and Illustrated Parts Data (IPD).
- A standardized method of FGC assignment for commodity types of components/items is normally established by the requiring authority (e.g., technical publications community). These standardized assignments make it easier for the user in the field to cross-reference between different TMs of equipment maintained by that organization. For instance, engines may always be documented under an FGC of “04" across all Army helicopter types.
- The FGC sequence of the MAC will dictate the sequence of entries in the narrative TM and IPD. A basic (usually two-position) group code assigned to identify major components, assemblies, and subassemblies to a functional system. Subordinate, subfunctional groups/subassemblies are coded to relate back to the basic (top position) FGC in a sequential, next higher assembly (NHA) relationship (i.e., top-down breakdown structure).

Mapping Functional Group Code (FGC) to Standard Numbering System (SNS)

- The maximum length of an FGC is 11 characters (IAW GEIA-STD-0007), whereas an SNS is typically six or eight characters (not including a Material Item Category Code). By converting the second and third level subassemblies (in an FGC) to single-character codes (subsystem and sub-subsystem in an SNS), a 10-character FGC can be mapped to an 8-character SNS.
- For example:
  - FGC 01**02**0**1**0100 (10 char) ⇨ SNS 01-**CB**-0100 (8 char)
- This re-use of an FGC allows for easy population of an SNS, leaving both the system and unit/assembly codes unchanged between FGC and SNS.

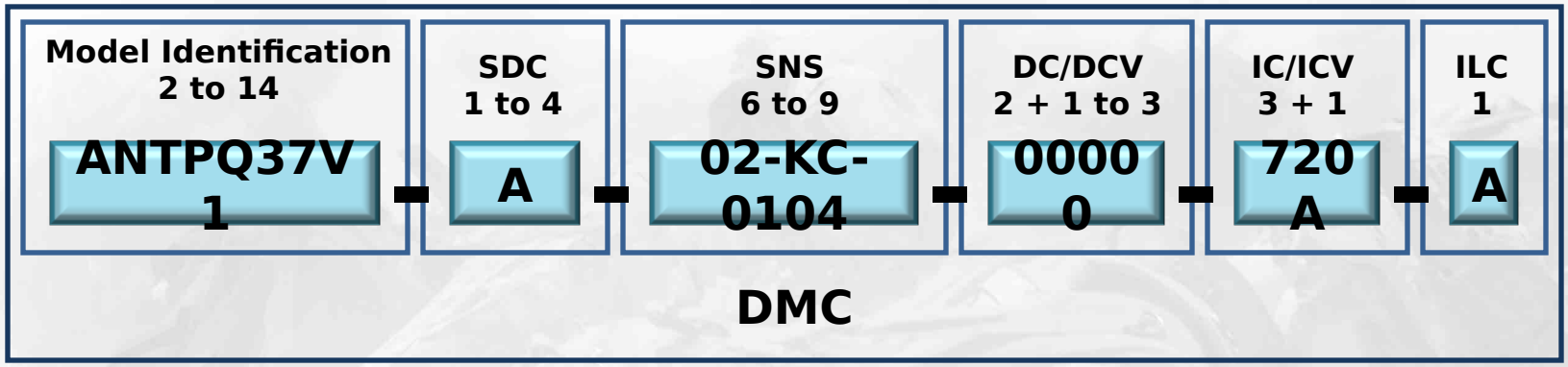
Conversion chart

Functional Group Code (FGC), positions 3-6, to subsystem and sub-subsystem codes

FGC-to-SNS (Positions 3-4 and 5-6)					
FGC Digits	Code	FGC Digits	Code	FGC Digits	Code
00	A	12	M	24	Y
01	B	13	N	25	Z
02	C	14	O	26	0
03	D	15	P	27	1
04	E	16	Q	28	2
05	F	17	R	29	3
06	G	18	S	30	4
07	H	19	T	31	5
08	I	20	U	32	6
09	J	21	V	33	7
10	K	22	W	34	8
11	L	23	X	35	9

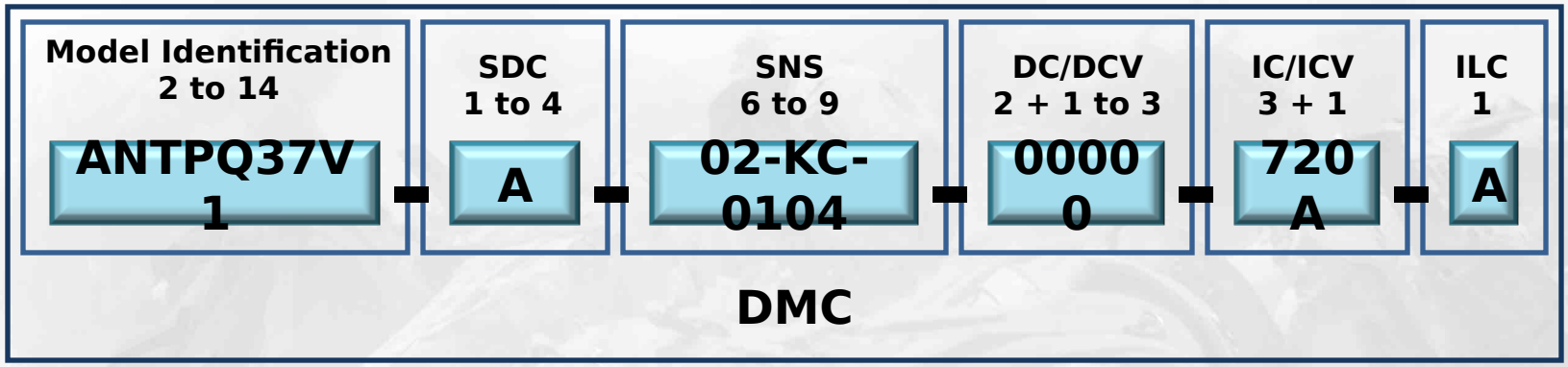
DISASSEMBLY CODE (DC) + VARIANT (DCV)

- **The DC identifies the breakdown condition of the assembly to which the Data Module (DM) applies**
  - Project defined disassembly codes indicate whether and how much an assembly must be broken down before the procedure in the DM can be initiated (e.g., it could indicate that the radio case must be opened and the power unit disconnected before a certain procedure can be initiated)
- **In the example below, the DC/DCV (00000) indicates that no disassembly or breakdown of the assembly is required to perform the procedure in this DM.**



INFORMATION CODE (IC) + VARIANT (ICV)

- If the Model Identification (MI) + System Difference Code (SDC) + Standard Numbering System (SNS) + Disassembly Code (DC) indicate the object of the Data Module(DM) (i.e., the equipment), the Information Code (IC) and variant (ICV) indicate the subject of the data module (i.e., the topic or procedure)
- In the example below, the IC/ICVV (720A) indicates that this is the Data Module Code (DMC) for the install procedure (of the speaker power cable, as indicated by the SNS).



CONTENT SELECTION EXAMPLE

The section of table below shows a segment of the content requirements for a publication. You can see that for each content requirement the type of Data Module (DM) is specified and the relevant Information Code (IC) is shown.

Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Test	AR	AR	5.87.8.1.5		Procedural	340	C	Testing
Service	AR	AR	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	AR	AR	5.87.8.1.7		Procedural	271	A	Adjust
Align	AR	AR	5.87.8.1.8		Procedural	272	A	Align
Calibrate	AR	AR	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	AR	AR	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	AR	AR	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	AR	AR	5.87.8.1.12		Procedural	685	C	Replace
Repair	AR	AR	5.87.8.1.13		Procedural	685	A	Repair
Paint	AR	AR	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	AR	AR	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	AR	AR	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR			Procedural			Lubrication

A Closer Look:

Information Codes (ICs) and Information Names

Information Codes (ICs)

- ICs identify the topic or procedure of a Data Module (DM)
- Example:
  - IC “800B = Shipping characteristics”
    - 800 = the information code
    - B = the information code variant
    - Shipping characteristics = the information name

Information Names

- Human-readable version of the Information Code (IC) (i.e., the short definition)
- Used with the equipment component name to provide the Data Module (DM) title
  - Example:
    - "Fuel Valve FV4P – Install proced[illegible]"

These two items together form the data module title.

The object of the data module (equipment component name) is derived from the SNS of the DMC (aka "technical name").

The subject of the data module (the procedure) is derived from the information code (& variant) of the DMC (aka "info name").

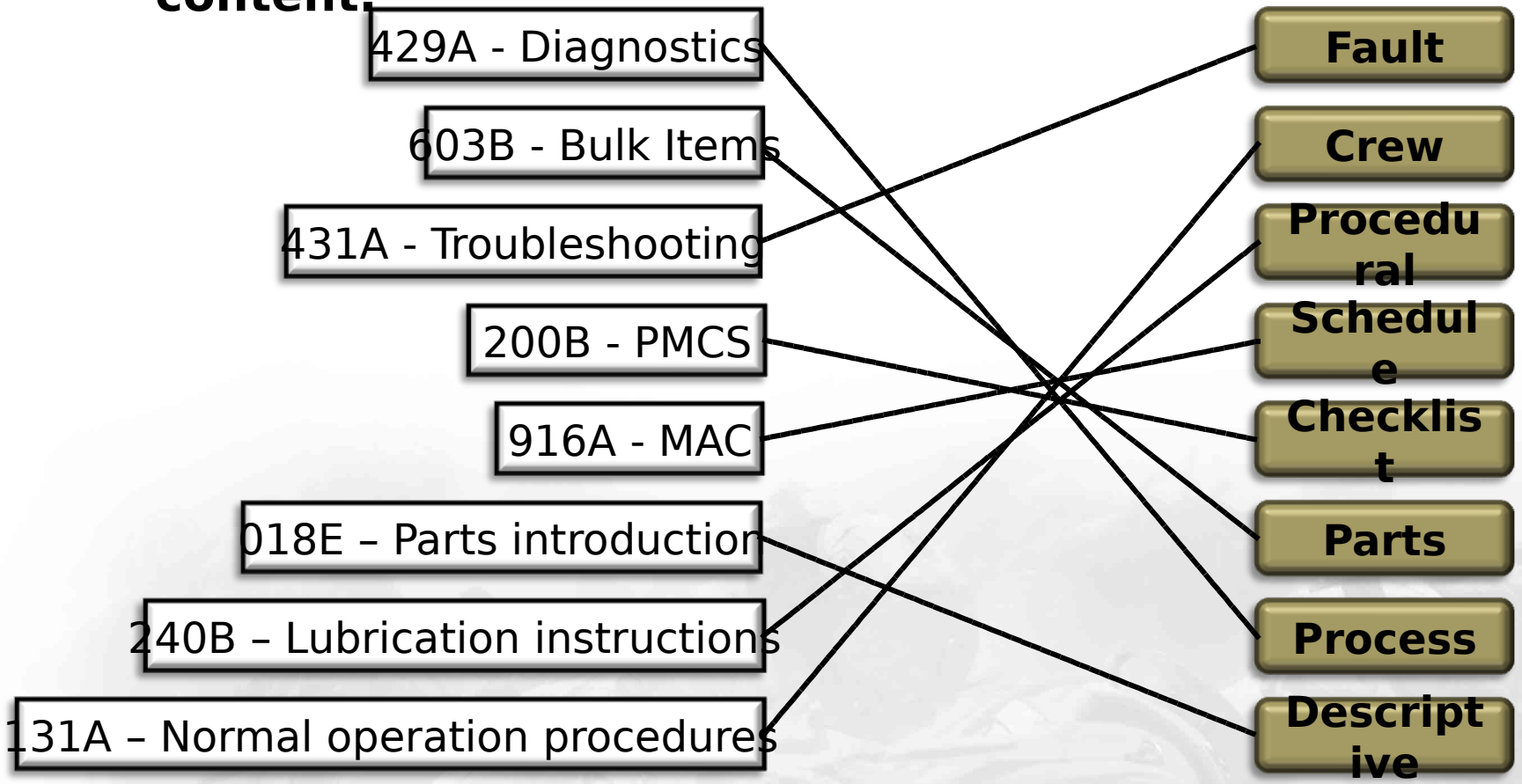
Army/Joint Service Information Codes (JS ICs)

- The Joint Services worked together to develop a common information code list to be used by all U.S. Services
  - The “A” variants (and Information names) in the JS IC list are identical to those found in S1000D Chapter 8.4
  - The variants beyond in the JS IC list augment those found in S1000D Chapter 8.4
  - In total, the JS IC list in MIL-STD-3031 replaces the IC lists in S1000D Chapter 8.4
- In some cases, the information name is different from the traditional/legacy Army title for a piece of content
  - The correct *meaning* for the content was retained
  - Example:
    - 131M “Normal operation check – Preflight” is the S1000D information name for the legacy content that was titled “Preflight check”

Exercise

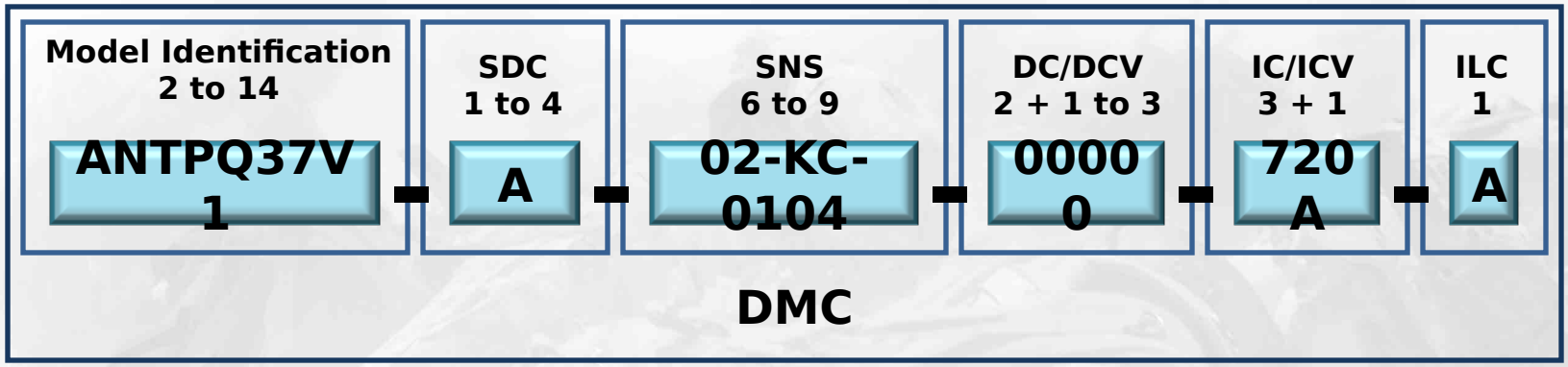
Exercise 1 – Information Codes (ICs)

- **Connect the information codes below with the data module type most likely to be used to prepare the content.**



ITEM LOCATION CODE (ILC)

- **The item location code indicates the location where the maintenance action should take place (e.g., on equipment, on a bench, etc.)**
- **In the example below, the ILC (A) indicates that the procedure in this Data Module Code (DMC) takes place on the equipment.**



Exercise

Exercise 2 – Build a Data Module Code (DMC)

- **Imagine you are part of the OH-58 Kiowa helicopter technical data project team. The following model identification codes have been registered with NAMSA:**
  - OH-58 Kiowa helicopter (OH58KIOWA)
  - Mast mounted sight thermal imaging system (MMSTIS05)
  - Rolls Royce engine (RR00XYZ)
  - Air-to-air Stinger missile system (ATAS02)
  - 50-caliber machine gun (50CALMG)

- **You have been instructed to develop a Data Module (DM) that provides the instructions for installing the 50-caliber machine gun to the skids of the airframe. The OH-58 is a new airframe and there is only one model with no variants or alternate configurations. The work to mount the gun will be performed on the airframe itself. The Standard Numbering System (SNS) for the gun mounting bracket on the skid is 01-DF-0001.**
- **The project has business rules that limit the System Difference Code (SDC) to 1 character and the Disassembly Code Variant (DCV) to three characters**
- **Identify the DMC that you will use for the DM you are preparing.**

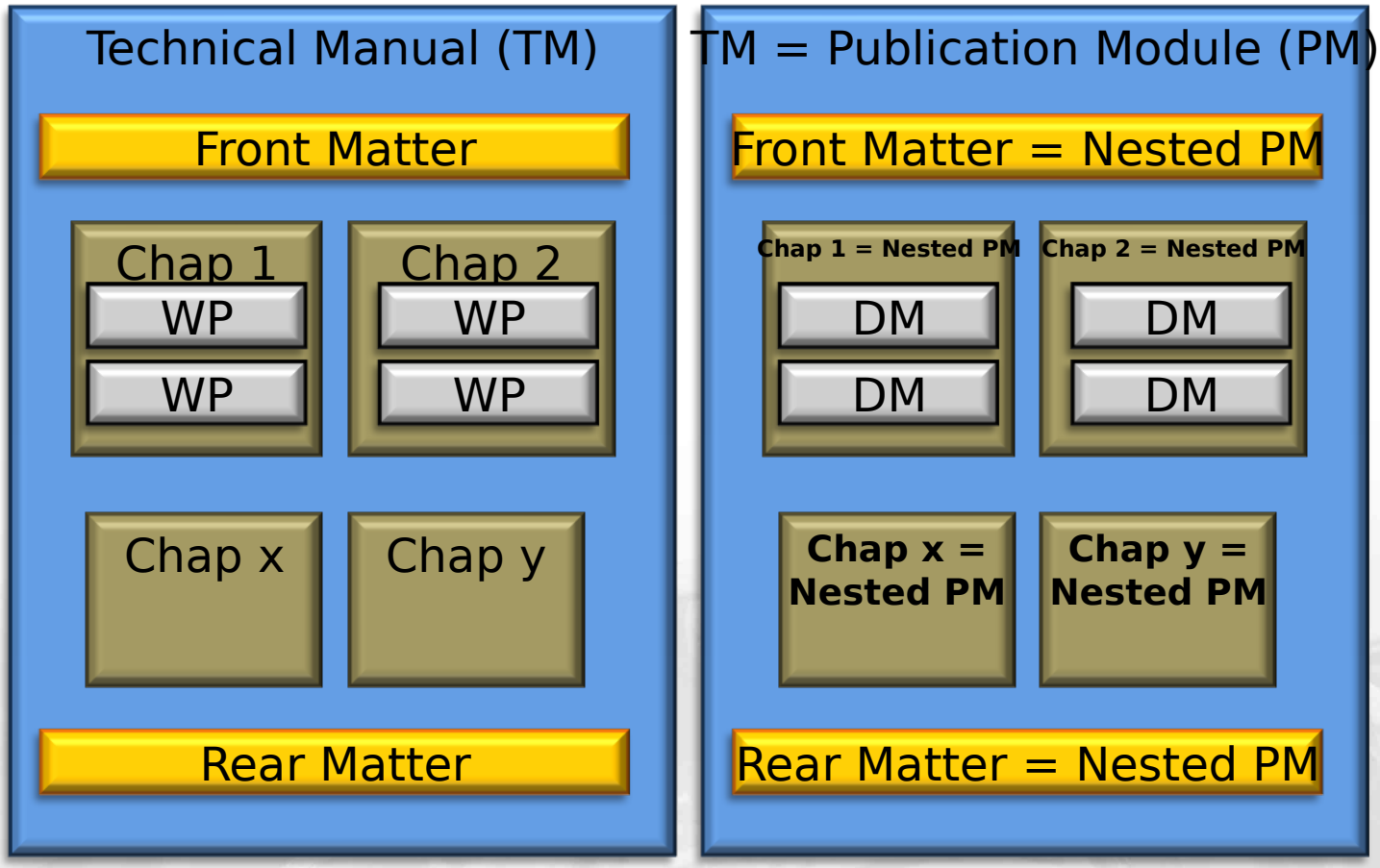
Model Identification	SDC	SNS	DCV	ICN	ILC
OH58KIOWA	A	01-DF-0001	00000	720A	A

PUBLICATION MODULES (PMs)

- **Publication module. For managing the preparation of an S1000D publication. A publication module has an identification and status section plus a content section that lists all Data Modules (DMs) (and any other publication modules or legacy PDF publications) in the order in which the publication will deliver them *(S1000D Chapter 4.9).***
  - *A publication module is a "wrapper" that sequences all of the content (data modules and nested publication modules) of a page-oriented or interactive electronic publication*
  - *The next slide illustrates how a pub module can be constructed using traditional concepts for comparison*

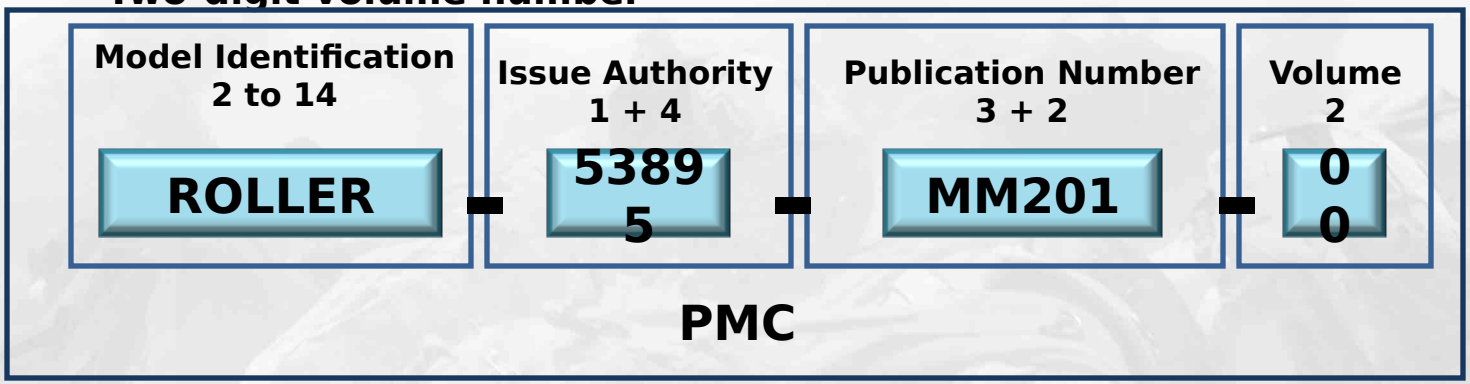
PUBLICATION MODULES (PMs)

Traditional/Legacy Pub S1000D Publication Module



PARENT PUBLICATION MODULE CODE (PMC)

- **The PMC has 4 parts:**
  - Model Identification (MI) code
    - **Same as in Data Module Code (DMC)**
  - Issuing authority
    - **Single-digit authority code (see slide 59) + four digit Federal Supply Code (FSC) (from https://www.drms.dla.mil/asset/fsclist.html)**
  - Publication number
    - **Three-digit joint service publication code (see slide 60 & 61) + two-digit sequence number (project assigned)**
  - Volume
    - **Two-digit volume number**



NESTED PUBLICATION MODULE CODE (PMC)

- **Nested PMC is coded just like a parent publication with the following exceptions:**
  - The entire 5 digit publication number is assigned by project decision (as opposed to just the final 2 digits)
  - The volume number is assigned by the project.

ISSUING AUTHORITY CODES

Code	Proponent
0	Tank-automotive and Armaments Command (TACOM)
1	Army Materiel Command (AMC)
2	Aviation and Missile Command (AMCOM)
3	Armament Research, Development, and Engineering Center (ARDEC)
4	Communications-Electronics/Life Cycle Management Command (C-E LCMC)
5	CECOM Communications Security Logistics Activity (CSLA)
6	Integrated Logistics Support Center-Soldier Biological Chemical (ILSC-SBC)
7	Research, Development, and Engineering Command, Edgewood Chemical Biological Center (ECBC)
8	Joint Munitions Command (JMC)
9	Reserved
A	Reserved

Issuing authority code ranges have been reserved for and are being used by the other Services:

- B-N: Navy (+USMC)
- O-Q: Coast Guard
- R-Z: USAF

PUBLICATION NUMBER

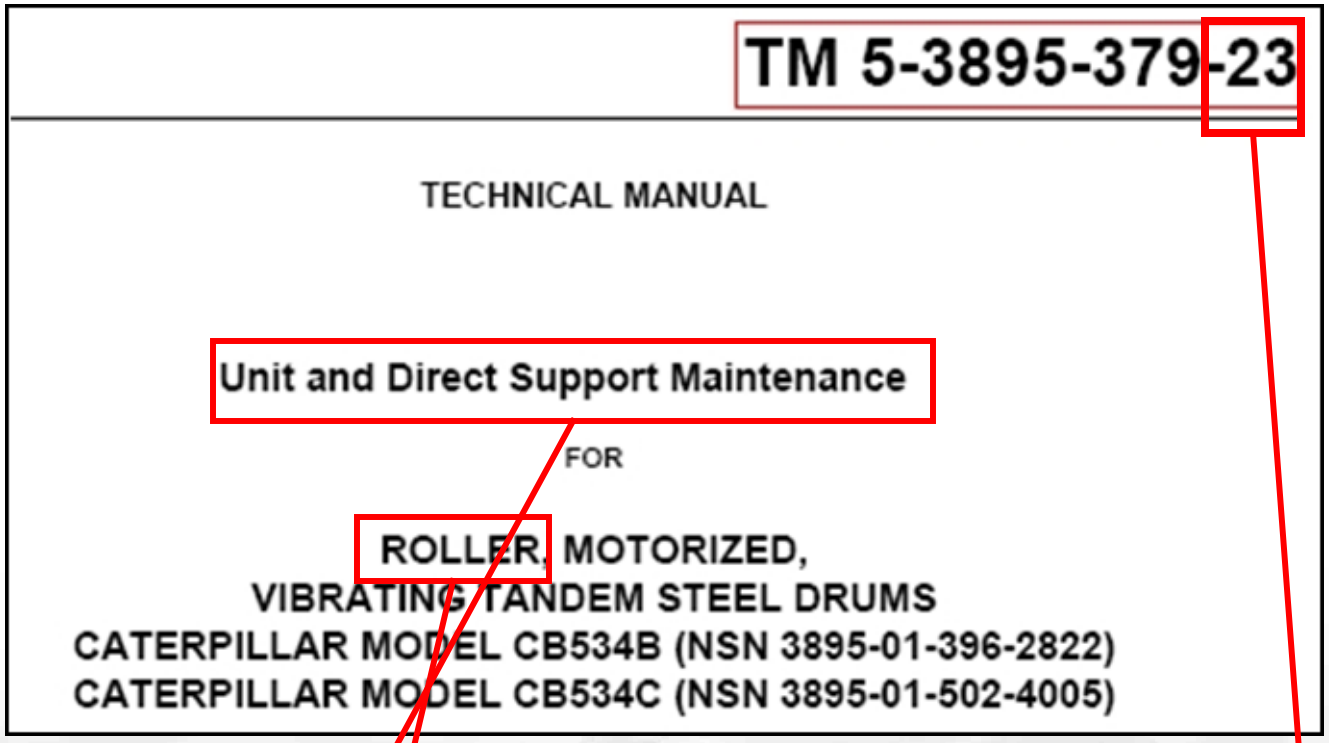
- **The publication types are listed in MIL-STD-3031**
- **It is a subset of a list maintained by the Navy (TMINS) that contains all US publication types**
- **Only the publications typically used by the Army are listed in MIL-STD-3031**

Publication code	Definition	Legacy publication type
OPI	Operator's Manual	10
MM3	Operator and Field Maintenance Manual	13
M3B	Operator and Field Maintenance Manual including Parts List	13&P
MM1	Operator, Field, and Sustainment Maintenance Manual	14
M1B	Operator, Field, and Sustainment Maintenance Manual including Parts List	14&P
MM2	Field Maintenance Manual	23
M2B	Field Maintenance Manual including Parts List	23&P
M2P	Field Maintenance Parts List	23P
MM4	Field and Sustainment Maintenance Manual	24
M4B	Field and Sustainment Maintenance Manual including Parts List	24&P
M4P	Field and Sustainment Maintenance parts list	24P
MM0	Sustainment Maintenance Manual	40
M0B	Sustainment Maintenance Manual including Parts List	40&P
M0P	Sustainment Maintenance Parts List	40P
BDR	Battle Damage Assessment and Repair	BDAR
DWR	Depot Maintenance Work Requirement	DMWR
DWP	DMWR including Parts List	DMWR w/Parts
DWO	DMWR containing National Maintenance Repair Standards	DMWR Containing Overhaul Standards
DOR	DMWR containing National Maintenance Repair Standards including Parts List	DMWR Containing Overhaul Standards w/Parts

Publication Number (cont.)

NWR	National Maintenance Work Requirement	NMWR
NWP	NMWR including Parts List	NMWR w/Parts
TTM	Aviation Field/Sustainment/Field & Sustainment Troubleshooting Manual	Aircraft Troubleshooting
PMD	Preventive Maintenance Daily Manual	Aircraft PMD
MSM	Preventive Maintenance Services Manual	Aircraft PMS
PMI	Phased Maintenance Inspection Checklist	Aircraft PM
DTM	Destruction of Equipment to Prevent Enemy Use	Destruction TMs
PAL	List of Publications	L
CLG	Preparation for Shipment (aircraft)	S
CCL	Pilot/Crew checklist (aircraft)	CL
HDR	Hand receipt	HR
FMM	Maintenance test flight (aircraft)	MTF
PCL	Operating procedures (communications security equipment) precombat checklist	OPPCL
PMC	Preventive Maintenance Checklist	PMC
MWO	Modification Work Order	MWO
WTB	Warranty Technical Bulletin	WTB
LBO	Lubrication Order	LO
TEB	Technical Bulletin	TB
SUM	Supply Manual	SM
SUC	Supply Catalog	SC
SUB	Supply Bulletin	SB
DRL	Depot Maintenance Reference List	DMRL
DMM	Depot Maintenance Manual	DM

PUBLICATION MODULE CODE (PMC) EXAMPLE



- **Unit and Direct Support Maintenance ⇨ Field Maintenance (-23)**
- **ROLLER = Model Identification**

PUBLICATION MODULE CODE (PMC) EXAMPLE

TM 5-3895-379-23

Now 2 positions

Model IC (2-14 char)	Issuing Authority (5 char)		# of Pub (5 char)		Vol. # (2 digits)
Model ID	Issuing Authority/ Service/ Command (1 char)	Category (FSC/SSCC) (4 char)	Type of Pub (Pub Identifier)/ Maint. Level (3 char)	Seq. # (2 char)	00 (Default)
ROLLER	5	3895	MM2	01	00

- S1000D PMC = ROLLER-53895-MM201-00
- MM2 = Field Maintenance Manual (-23)
- Project assigns the sequential number (default "00" if not used)
- Currently, S1000D manuals will require both a Publication Module Code (PMC) and a Technical Manual (TM) Number.

Exercises

Exercise 3 – Build a Publication Module Code

- **Imagine you are part of the OH-58 Kiowa helicopter technical data project team. The following model identification codes have been registered with NAMSA:**
  - OH-58 Kiowa helicopter (OH58KIOWA)
- **You have been instructed to develop a PMC to cover the following:**
  - Field Maintenance Manual, Crew checklist, and Maintenance test flight manual
- **The following information is relevant:**
  - Proponent for OH-58 is AMCOM
  - FSC: 1520
  - Initial sequence begins at “01”
    - **No previous Publication Module Codes exist**

Exercise 3 – Build a Publication Module Code

- **Field Maintenance Manual**

		Issuing Authority		# of Pub		
	Model identification	Iss. Auth.	FSC	Pub Type	Seq. #	Vol
C	A			2	1	0

PMC-OH58KIOWA-21520-MM201-00

Exercise 3 – Build a Publication Module Code

- **Crew checklist**

		Issuing Authority		# of Pub		
	Model identification	Iss. Auth.	FSC	Pub Type	Seq. #	Vol
C	A				1	0

PMC-OH58KIOWA-21520-CCL01-00

Exercise 3 – Build a Publication Module Code

- **Maintenance test flight manual**

		Issuing Authority		# of Pub		
	Model identification	Iss. Auth.	FSC	Pub Type	Seq. #	Vol
C	A			M	1	0

PMC-OH58KIOWA-21520-FMM01-00

Module 4

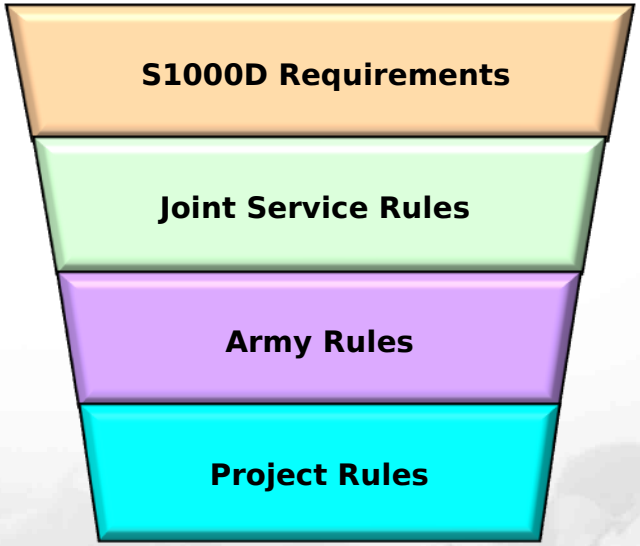
LAYERED DECISIONS: THE BUSINESS RULES

MODULE 4: LAYERED DECISIONS: THE BUSINESS RULES (BRs)

- **Business rules (BRs) reflect policies, procedures, or constraints that affect how an organization or project conducts its business.**
- **BRs are implemented at decision points. They essentially make a number of the possible decisions in advance.**
- **The BRs for S1000D publications form a hierarchy, with each layer inheriting and extending the previous layer's rules.**
- **For each of the layers, the total number of rules (decisions made) increases, and the number of possible decisions remaining decreases.**
- **The goal is to have almost all the decisions made before writing begins, so that everyone is writing to the same rules.**
- **Projects are allowed to add decision points and tailor the rules within the project layer.**

BUSINESS RULE (BR) LAYERS

- **The requirements defined within S1000D are the top layer of BRs.**
- **The next set of layers is the organization-wide layers. They will vary with the organization; for the Army, Joint Service rules come first, then the Army rules.**
- **For the project layer, Government personnel will determine the basic project-related rules. Contractors will make recommendations for rules responding to the downstream decision points.**
- **Many sections of S1000D call for decisions to be made at several stages. A project needs to make sure that some sort of decision has been made everywhere that one is required. (See MIL-STD-3031.)**
- **No BR may contradict or alter the S1000D schemas or basic philosophies, nor any of the BRs in the preceding layers.**



S1000D DECISION POINTS

- **S1000D specifies the decision points at which a Business Rule (BR) needs to be applied. S1000D requirements have "must" wording. Decision points that are just recommendations or options in S1000D may become rules in a later layer.**
- **The decision points in S1000D involve a wide range of topics, sometimes simultaneously.**
  - **These categories of BRs are often interdependent; for example, data exchange and data management rules will affect each other.**

CATEGORIZED BUSINESS RULES (BRs) AND PROJECT DECISIONS

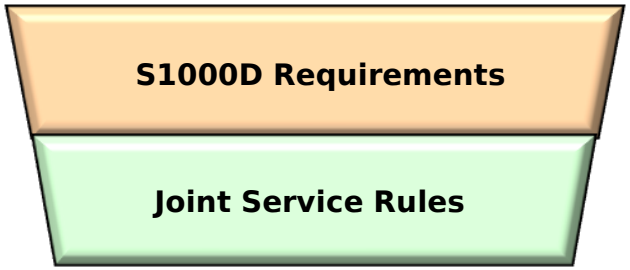
S1000D CATEGORY	ARMY EXAMPLES	PROJECT EXAMPLES
General - Overall decisions about S1000D implementation	Project business rules shall not contradict or supersede higher-level DOD or Service business rules or requirements contained within S1000D.	The project shall decide which information sets are used and the definition of their content.
Product definition - How product is structured, like the SNS rules	Standard Numbering System (SNS) shall be derived from Government Electronics and Information Association (GEIA)-STD-0007 data if available.	The project shall determine the use of the material item category code (to indicate different types of SNS applicable to an individual project).
Maintenance philosophy and concepts of operation - Content selection – breadth, depth, type	Each type of TM/IETP shall provide in detail the maintenance coverage prescribed for the applicable maintenance level(s) by the Maintenance Allocation Chart (MAC) and SMR-coded items.	The project shall decide on the needed and available values of the maintenance levels.
Security issues - Any type of data restrictions	Security classification shall be included in the DMRL.	The project shall determine the use of the protective marking “FOR OFFICIAL USE ONLY (FOUO)” for non-COMSEC publications.
Business	Programs shall submit all MII	The project shall specify dates

CATEGORIZED BUSINESS RULES (BRs) AND PROJECT DECISIONS

S1000D CATEGORY	ARMY EXAMPLES	PROJECT EXAMPLES
Data creation - Writing and markup rules, as well as illustration/ multimedia rules	Steps shall not have titles.	The project shall decide on the maximum step levels allowed.
Data exchange - Includes use of the DDN, DMRL, and CSL	The DMRL shall be maintained throughout the project enabling a mechanism to ensure that only data modules that support the maintenance philosophy are produced.	The project shall define which packaging file formats may be used to deliver change packages between vendor and customer.
Data integrity and management - Workflow and QA	Final delivery to the customer shall not include unverified data modules.	For other than final delivery, the project shall decide on whether unverified data modules can be delivered to the customer.
Data output - Page-based and/or IETP	Text shall be positioned above and below the illustration, and not on the illustration's left or right sides.	The project shall determine if multimedia is suitable for the environment in which the project will operate.

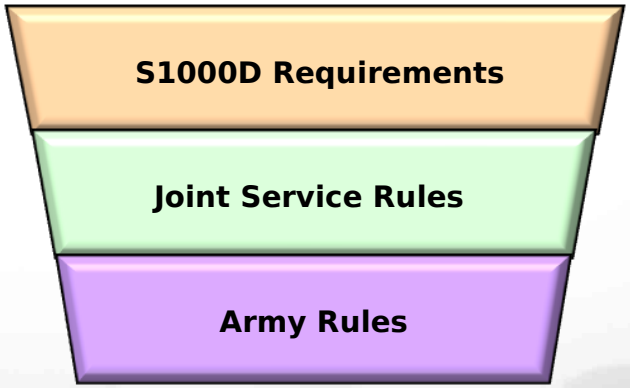
JOINT SERVICE BUSINESS RULES (BRs)

- **The next tier of BRs is those set up by the Joint Services (JSs). They are the same for all the services.**
- **There are approximately 80 JS BRs.**
- **These Joint Service rules (labeled "(JS)") are included in *Army Business Rules for S1000D* (MIL-STD-3031).**
- **Some examples of areas covered by Joint service rules are security, common look and feel, distribution markings, etc.**



ARMY BUSINESS RULES (BRs)

- ***Army Business Rules for S1000D,*** **MIL-STD-3031, is organized in the same order as the S1000D Chapters. It includes both the JS rules and the Army-wide rules.**
- **The Army BRs in MIL-STD-3031 were extracted from more than 20 different Army standards. Projects are not permitted to make decisions that contradict any of them.**
- **In addition to the BRs, MIL-STD-3031 contains an Army-tailored Functionality Matrix and Army Content Selection Matrices. These new matrices replace the functionality matrix and information sets in Chapters 6.4 and 5.2 of S1000D.**
- **Currently, the Army has no documented requirements for some of the functionalities that S1000D covers, such as the use of the wiring DM. Projects needing technical data in areas not addressed by the MIL-STD will need to coordinate with LOGSA.**



SAMPLE MIL-STD-3031 BUSINESS RULES (BRs)

The chunk of MIL-STD text below shows Army BRs (5.19.1.22-25) and project decision points (5.19.2.1-3). (Note: The JS rules are marked "(JS).")

5.19.1.22 Use of <reasonForUpdate> and change packages.

Reason for update (element <reasonForUpdate>) shall be used and it shall include the reasons for updates for each changed data module in the latest change package. It shall also include textual references to all appropriate reason for update documentation (e.g., engineering change proposals). (JS)

5.19.1.23 Use of the element <reasonForUpdate> and highlights.

Reason for update shall be used to automatically generate a highlights data module. It shall be used from issue "002" upwards. (JS)

5.19.1.24 Availability statement and general purpose notices.

The availability statement and any general purpose notices that apply to the entire publication shall be populated using the <remarks> element of the publication module. The availability statement shall be used for DMWR/NMWR only.

5.19.1.25 Content of <supersedure>.

When an publication is revised, a supersedure notice shall be included and an asterisk (*) shall prefix the supersedure notice and the PMC.

5.19.2.1 Exchange of draft data modules within the project.

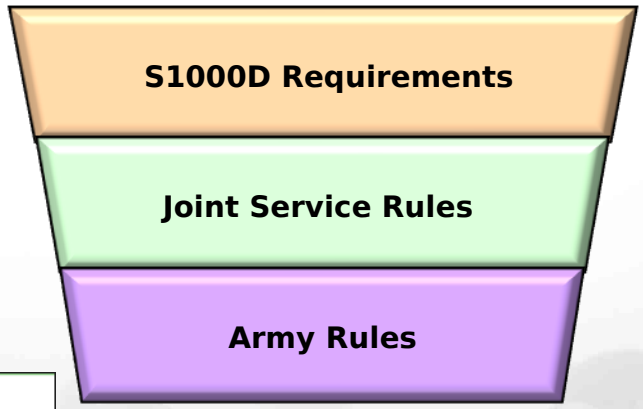
The project shall decide whether to allow the exchange of draft data modules or not.

5.19.2.2 Issue date.

The definition of the issue date for data modules is to be determined by the project in its business rules. This can be, for example, the input date (i.e. the release to CSDB date), or the cut-off date for the information.

5.19.2.3 Data module code extension.

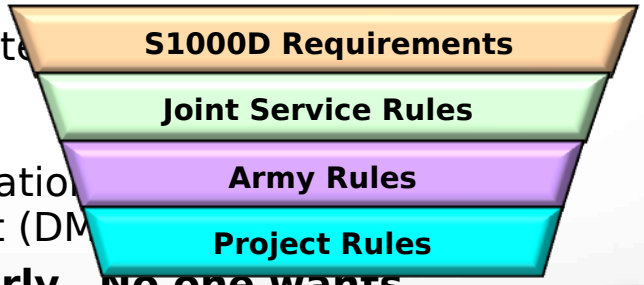
The project shall decide if the extended data module identification scheme has to be applied to achieve unique data module instance identities.



PROJECT-SPECIFIC BUSINESS RULES (BRs)

- **The project BRs cover all requirements that are specific to the individual sub-project, project, or organization, and that are not common across a higher organization. They must address all the remaining decision points.**
- **Project-specific BRs are by no means limited to authoring or illustrating. They can fall into any of the S1000D categories; e.g., product definition or data creation. Some possibilities are:**
  - Identifying optional XML elements and attributes that a project wishes to make mandatory or to prohibit
  - Specifying the content of the elements and attribute
  - Specifying the Data Module (DM) coding strategy
  - Defining the rules that will apply to graphics
  - Specifying the rules for using management informatio

  Like Data Dispatch Note (DDN) and DM Req'ment List (DM

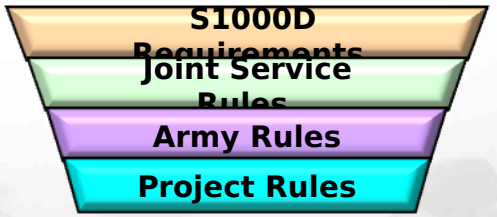


- **It is important to document the project BRs clearly. No one wants misunderstandings in areas like the requirements for optional elements.**
  - The Project BRs will be documented in the DID (DI-TMSS-81784)
- **Project BRs need to be updated throughout the life of the project as the equipment, mission, and other circumstances change.**
- **If a piece of equipment is used by multiple projects or services, it is possible to use the modules related to it in all the relevant manuals.**

PROJECT BUSINESS RULES (BRs) MATRIX

The matrix provided for documenting the project decisions is a downloadable Excel file that looks approximately like the table below. Some items may require more space than the matrix can provide; for example, an item that calls for listing a number of tailored information codes. (The DID (DI-TMSS-81784) also asks for some more general information about the project.)

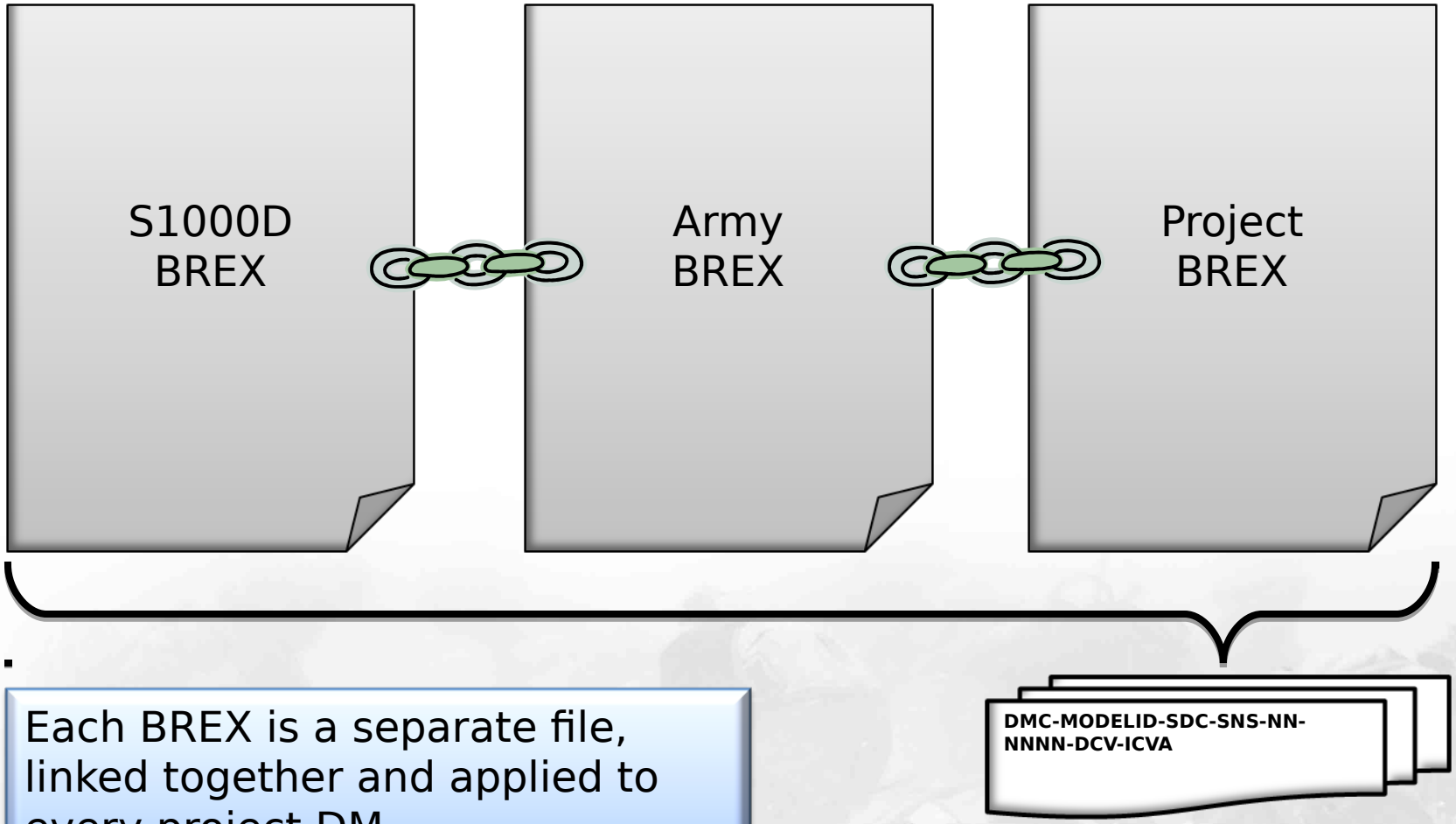
Army BR paragraph number	Army BR paragraph title	S1000D Chapter Context	Text of Project Decision Point	Project Decision
5.140.1.2.2	Page orientation.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers	Orientation of pages, either vertical (portrait) or horizontal (landscape) shall be consistent throughout a given manual except where exceptions are allowed elsewhere by these business rules.	
5.140.1.2.3	Use of double column text.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers	The project shall decide whether to use double column text or not, and under what circumstances.	
5.140.2.2.1	Applicability.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers	When applicability is used, the project shall determine the use of either applicability codes, or a human readable expression.	
5.140.3.2.1	Double sided printing of foldout pages.	S1000D Chapter 6.2.1 – Information presentation/use – Page layout, paper publications, headers and footers	The project shall decide whether to use double sided printing on foldout pages.	
5.140.5.2	Project decisions	S1000D Chapter 6.2.1 –	The project shall determine if and when	



GENERATING AND SHARING BUSINESS RULES (BRs)

- **The Government lead is responsible for making sure that a BR is written to address every decision point in the project layer.**
- **The PM and contractor need to review and agree to the completed Army content selection matrices, and, for Interactive Electronic Technical Publication (IETP), the Army's functionality matrix (both are in MIL-STD-3031), *BEFORE* completing the BR matrix.**
- **The Business Rules EXchange (BREX) file is another XML-coded Data Module (DM) designed for recording and exchanging BR information among all the contractors working on a TM project. It references all the layers of BRs that govern the production of DMs: Joint Service, Army, and project. Every DM refers to a BREX, because its rules apply to the DM's content. Each DM will reference the lowest level BREX applicable to the project.**
- **The Army BREX file is developed as Government-Furnished Information (GFI). The contractor is responsible for developing the project-specific BREX which will be a contract deliverable item. It can also be used to assist in verifying the DMs .**

LAYERED BREX



Each BREX is a separate file, linked together and applied to every project DM.

A Closer Look:

Business Rules EXchange (BREX)

BREX

- Army project decisions are documented in either an Excel worksheet or in a Word document.
  - These decisions can be classified as narrative or machine-verifiable decisions.
    - A narrative decision cannot be verified by a machine, because it cannot determine some necessary information on its own.
    - Machine-verifiable decisions are true or false decisions verified by a computer. These can include whether or not an element, attribute, or value is missing when required or included when prohibited.
- A BREX is an XML-authored file which typically contains only machine-verifiable decisions. Data Modules (DMs) can be validated against a BREX to ensure compliance with existing and agreed decisions. Every DM must reference a BREX.
  - For example, an Army Business Rule (BR) prohibits the use of the attribute vitalWarningFlag. If a project includes this attribute anywhere in a DM and validates that DM against the Army BREX, an error will be generated in the error report or log file.

Layered BREX

- There is a hierarchy to follow when it comes to BREX.
  1. The top-level BREX is provided by S1000D and references itself.
  2. The Army BREX is the next highest BREX and references the S1000D BREX.
  3. Project BREX are under the Army BREX and will either reference the Army BREX or the command BREX, if applicable.
- Each BREX (top level to bottom level) further restricts existing decisions and/or addresses any remaining project decision points.
  - For example, S1000D may allow “X” attribute the values “A-M,” but the Army further restricts the values to allow only “A-H.” A project may opt to restrict those values even further to “A-D” and would include those allowed values in their project BREX.

BREX Limitations

- A BREX can check for the existence of elements and attributes (and values), but not necessarily for verbatim (boilerplate) or required content.
- The Army BREX will not verify compliance with every Army decision contained in MIL-STD-3031, nor is a project BREX expected to verify compliance with every documented Business Rule (BR).
- A BREX is limited to validating only data modules. Other CSDB objects are not currently supported (for example, publication modules).

DOCUMENTING THE BUSINESS RULES (BRs)

- **The Technical Manual Contract Package (TMCP) needs to include documentation of all the predetermined BRs. The complete set of BRs will later be a contract deliverable.**
- **MIL-STD-3031 not only presents all the S1000D decision points that are a project's responsibility, but it includes a matrix listing them. PMs and contractors should use this matrix to document a BR for each of these decision points. An Excel version of this matrix can be downloaded from https://www.logsa.army.mil/mil40051/S1000D.cfm**
- **A Data Item Description (DID) DI-TMSS-81784 has been issued to supplement the MIL-STD guidance on documenting project BRs**
- **Until S1000D is better established in the Army, projects are encouraged to coordinate with LOGSA.**

A Closer Look:

Developing Project Business Rules (BRs)

The Process

- Objective:
  - To arrive at tailored sets of technical data requirements that are compliant with S1000D while at the same time meeting a specific project's needs.
- Start with the list of Business Rules Decision (BRD) points from MIL-STD-3031 App C
- Remove unnecessary sections, based on equipment and other program requirements
- Form a Business Rules Working Group (BRWG)
  - Government lead
    - Needs authority and ability to make decisions (e.g., Logistics Lead)
  - S1000D and Business Rules (BRs) experts
  - Equipment SMEs
  - Technical authors
    - Government publications representative/Lead Tech Writer
    - Contractor Lead Tech Author

The Process

- The Business Rules Working Group (BRWG) should meet regularly
  - Typically biweekly by telecon
  - Go through the Business Rules Decision (BRD) points list and decide on project Business Rules (BRs) for each
  - Assign and complete action items to research issues between meetings
- The process concludes when all BRD points have corresponding BRs

EXERCISE

EXERCISE 4 – Business Rules Working Group

- **Divide the class into teams of 4 to 6 members. Each team member should assume the identity of one of the following jobs for a role playing exercise:**
  - Government Lead (1)
  - S1000D SME (1)
  - Equipment SME (1 or 2)
  - Technical Author (1 or 2)
- **The team should identify a piece of equipment and carry out a mock-Business Rules Working Group (BRWG) meeting. The equipment identified can be one from an existing, planned, or hypothetical project. The agenda for the meeting is to write project business rules for the decision points on the following slide. The trainee that takes the role of the Government Lead should facilitate the discussion.**

EXERCISE 4 – Business Rules Working Group

1. The project shall decide whether to require the use of Simplified Technical English or not.
2. The project shall define “standard reason for update” sentences to be used.
3. The project shall decide whether an index is required and to what level indexing should be made.
4. If using paragraph significant data markup, the project shall decide which types of data to mark up and in what contexts.
5. The project shall decide whether or not to use the element <commonInfo>, when to use the element, and give guidance and rules that will ensure it is consistently used.
6. The project shall decide when to use the process data module.
7. The project shall decide how to populate the enumerated attribute checkListCategory
8. The project shall decide on which model identification codes to use for the project.
9. The project shall decide which of the types of first verification are applied to data modules/technical publications.
10. The project shall determine if acknowledgment of alerts will be required.
11. The project shall determine if multimedia is suitable for the environment in which the project will operate.

Module 5

S1000D AND THE ACQUISITION PROCESS

MODULE 5: HOW S1000D CHANGES THE ACQUISITION PROCESS

- **Some features of S1000D that make a difference to the acquisition process:**
  - **Having source data deliverables that are XML-authored Data Modules (DMs).***
  - **Using Business Rules (BRs) to specify virtually all possible decisions about the document and its contents.**
- **But first you have to decide whether S1000D is suitable; then, whether to produce a paper manual or an Interactive Electronic Technical Publication (IETP); and then, what content is needed.**

*** MIL-STD-40051 data is also authored in XML.**

WHEN IS S1000D APPROPRIATE?

- **Some of the factors that could indicate that S1000D is appropriate? When it is a new system and…**
  - **The program is a multiservice program**
  - **If S1000D Data Modules (DMs) already exist**
    - **The OEM may already be developing DMs for the equipment for other customers**
    - **S1000D DMs already exist from other related programs that can be reused**
  - **There is a requirement to link the technical data to the Logistics or other product data**
  - **The data will be in an Interactive Electronic Technical Publication (IETP) and there could be foreign military sales**
  - **It is likely that data could be reused and/or shared with other publications or programs**
  - **A business case indicates that S1000D is a cost-effective alternative**
  - **The product has a long life cycle**

WHEN IS S1000D NOT APPROPRIATE?

- **Some of the factors that would indicate that S1000D is not appropriate?**
  - The equipment has a short life cycle
  - The equipment is low density
  - The equipment is a simple device
  - A COTS manual exists and is sufficient
  - A majority of the data exists in a different standard
  - The existing vendor does not have S1000D experience
  - The Concept of Operations (CONOPS) or a business case indicates that S1000D is not a cost-effective alternative

DECIDING ON THE PRESENTATION

- **Using XML markup allows a document to be seen and used in a variety of formats, but the project should decide on the manual's presentation (IETP vs. page-based) early on, since that will dictate whether or not the functionality matrix is needed.**
- **Each project must decide the best fit for its specific equipment and end-user requirements.**
- **Reviewing the functionality matrix may also help to decide whether to produce an Interactive Electronic Technical Publication (IETP) or an electronic page-based document (or both).**

FUNCTIONALITY CATEGORIES

The matrix's 12 main functionality categories are as follows:

CATEGORY	TYPES OF FUNCTIONALITIES COVERED
Access	Allow/restrict user viewing.
Annotation	User's ability to add notations such as bookmarks.
Delivery and distribution	How data will be moved from vendor to client to end users. Both infrastructure and costs are important considerations here.
Diagnostics and prognostics	Fault identification, from basic troubleshooting to product-integrated systems. Ability to predict degradation/failure. Again, a sizable potential cost driver.
External processes	Ability to interact with external processes to retrieve/transmit information.
Graphics	Potential levels of graphics display, interactivity, and navigation. Complex functionalities may have high cost and system requirements.
Linking	Linking can be within a publication or external. Effort/cost rise for access to resources like material handling information, or integration with other data.
Navigation and tracking	Some navigation/tracking options are basic, but higher-complexity techniques like dialog driven interaction and some filtering techniques raise costs.
Printing	Output style. Defining hard-copy-style output adds to the cost/complexity of IETPs. It is not needed if an IETP will be used in an electronic environment only.
Special content	Inclusion of additional data types such as audio, motion video, and animations. Content cost and performance may be issues.
Updates	Choice of methodology for making updates (which includes revisions, Rapid Action Changes, etc.) can affect life cycle costs.
User operation mode	Functionality that has to do with the user's ability to connect with the source of the data (e.g., standalone mode or network connected mode).

THE FUNCTIONALITY MATRIX COLUMNS

The matrix columns are as follows:

- **Complexity.** The values in this column provide a relative degree of complexity, which can give some indication of cost.
- **Requirement.** The Army has entered some requirements in this column; projects must determine which other functionalities need to be defined as requirements for the manuals being acquired.

Unique to 3031

- **All data sets.** This column indicates that the Army expects a particular functionality to apply to all the information sets used.
- **Individual data sets.** Each of the Army's information sets appears on the horizontal axis. If no A is found in the ***All data sets*** column, the project needs to indicate which functionality is needed for each information set.

COMPLETING THE FUNCTIONALITY MATRIX

- **Projects need to fill out a functionality matrix at the same time that they select the appropriate content for a manual. Each functionality is fully defined in S1000D Chapter 6.4.2. (Content matrices for various types of publications are given in MIL-STD-3031.) Involve all project stakeholders!**
- **The preliminary functionality matrix should be provided as part of the Technical Manual Contract Package (TMCP), so prospective contractors can evaluate it (and use the matrix to prepare their response).**
- **The prospective contractors should be encouraged to propose additional or modified functional requirements. (If accepted, these will affect the product plan, content matrices, TM content, and project cost.)**
- **The acquisition officer needs to review the pricing and evaluate the costs and benefits associated with the TMs as they are proposed.**
- **If higher-cost functionalities are specified, some tradeoffs may be required.**

You can just use checkmarks, but rankings (like Required vs. Nice to have, or a set of colors indicating importance or conditions) increase the usefulness of the matrix.

THE ARMY INFORMATION SETS

- Front Matter
- Rear Matter
- General Information, Theory of Operation
- Operator Instructions
- Aircraft Operator
- Aircraft Operator Checklist
- Aircraft MTF
- Troubleshooting
- PMCS
- Maintenance
- Ammunition Maintenance
- Parts Information
- Supporting Information
- Aircraft Maintenance
- Depot Maintenance
- Depot Troubleshooting
- Aviation Troubleshooting
- Preventive Maintenance
- Phased Maintenance
- BDAR
- Destruction to Prevent Enemy Use
- Auxiliary Equipment Maintenance
- Hand Receipt
- Supplemental Information for COTS
- Preventive Maintenance Checklists
- Preparation for Shipment of Aircraft
- Standard Generator Set - Operator/Unit
- Standard Generator Set - Intermediate & Depot
- DMWR/NMWR – Conventional and Chemical Ammunition
- Munitions and Ammunition Data Sheet
- Demilitarization of Surplus Items
- Warranty Technical Bulletin
- Depot Test Equipment
- Lubrication Orders

A Closer Look:

Content Selection, Functionality, & Data Module Lists

Content Selection, Functionality, & Data Module Lists

- The process of determining content scope of an S1000D project can be simplified by breaking the process down to its component steps:
  - **Select manual types**
  - **Select content (information sets)**
  - **Select functionality**
  - **Develop Standard Numbering System (SNS) (equipment breakdown)**
  - **Create Data Module Requirements Lists (DMRL)**

Select Manual Types

- The selection of manual types will be guided by the type of equipment and the maintenance philosophy or CONOPS of the program
- MIL-STD-3031 Appendix A provides a list of common pre-defined Army manual types

Select Content (Information Sets)

- Content within each pre-defined manual type can be tailored

Table A-VIII. Field and Sustainment Maintenance Manual including Parts Information IETP requirements matrix for _____.

Content Requirement	M2B Req.	M4B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
Test	R	P	5.87.8.1.5		Procedural	340	C	Testing
Service	R	P	5.87.8.1.6		Procedural	200	A	Servicing
Adjust	R	P	5.87.8.1.7		Procedural	271	A	Adjust
Align	R	P	5.87.8.1.8		Procedural	272	A	Align
Calibrate	P	P	5.87.8.1.9		Procedural	273	A	Calibrate
Remove	R	P	5.87.8.1.10		Procedural	520	A	Removal procedure
Install	R	P	5.87.8.1.11		Procedural	720	A	Install procedure
Replace	R	P	5.87.8.1.12		Procedural	685	C	Replace
Repair	R	P	5.87.8.1.13		Procedural	685	A	Repair
Paint	P	P	5.87.8.1.14		Procedural	257	B	Painting
Overhaul	R	P	5.87.8.1.15		Procedural	664	B	Overhaul procedure
Rebuild	R	P	5.87.8.1.16		Procedural	664	C	Rebuild
Lubricate	AR	AR			Procedural	240	A	Lubrication

Select Functionality

- Program stakeholders should collaborate to determine the functionality that is needed in the Interactive Electronic Technical Publication (IETP) to support the equipment and CONOPS

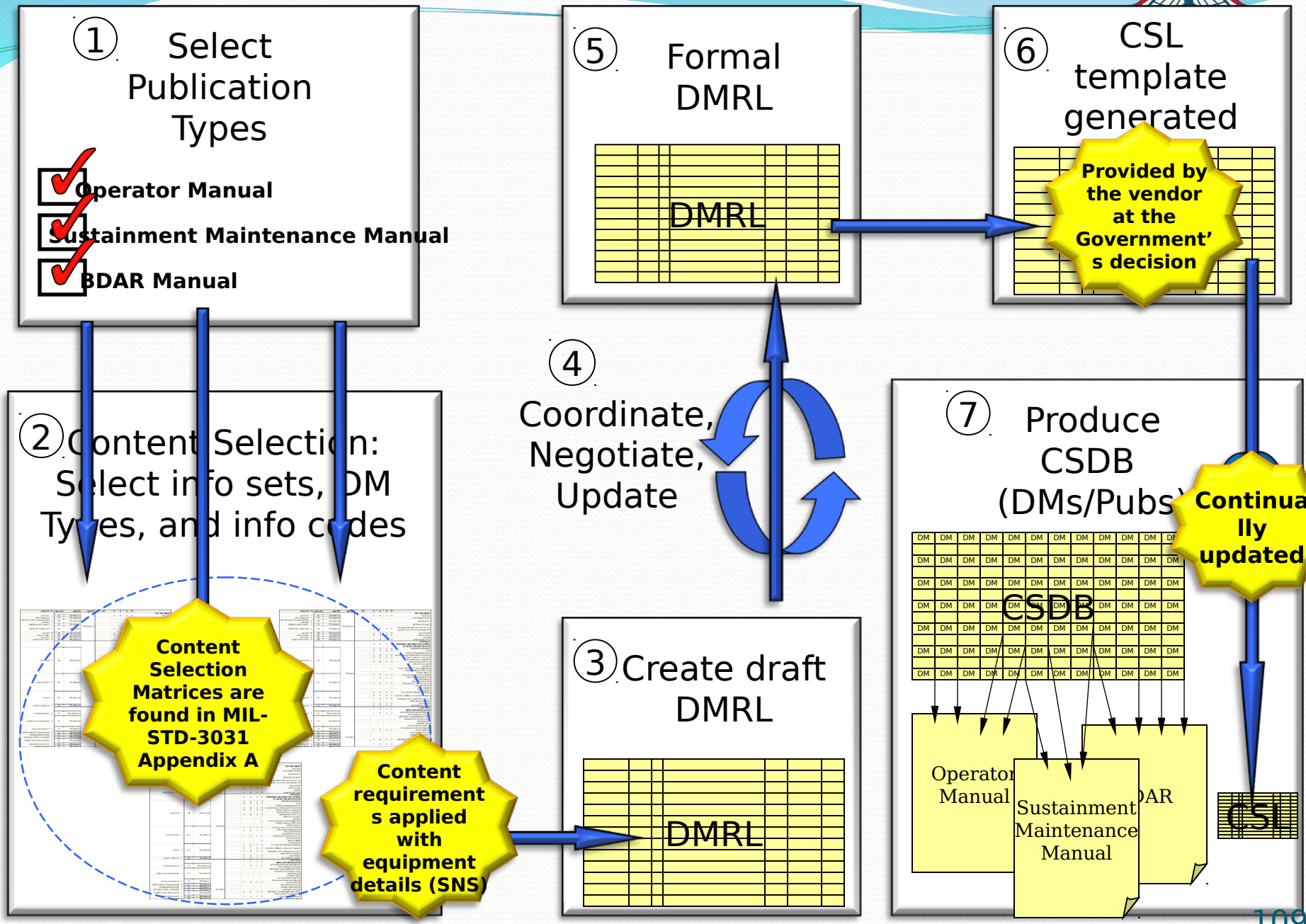
Functionality	Complexity	Requirement	All data sets	Front Matter	Rear Matter	General Information, Theory of Operation	Operator Instructions	Aircraft Operator	Aircraft Operator Checklist	Aircraft MTF	Troubleshooting	PMCS	Maintenance	Ammunition Maintenance	Parts Information
Login	2	✓	A												
Suspend and restart	1	✓	A												
Exit	1	R	A												
Action complete indicator (checkbox)	1								✓			✓			
Global data annotation	2		A												
Local data annotation	2		A												
Personal annotation	1		A												
Redlining text	3		A												
Redlining graphics	3		A												

Develop SNS (Equipment Breakdown)

- The Standard Numbering System (SNS) should match the predetermined equipment breakdown
  - This is based on the same breakdown used for parts and MAC data
- The equipment breakdown, as documented by the SNS, along with the content selection matrices and the maintenance plan will help determine the purpose of each Data Module (DM) and how many of each DM are needed

Create Data Module Requirements List (DMRL)

- The DMRL is the document that identifies each specific Data Module (DM) required to be produced and delivered
  - DM type and purpose derived from the content selection matrix (and functionality matrix)
  - DM quantities/instances determined by the equipment (Standard Numbering System (SNS)), the content selection matrices and the maintenance plan will help determine the purpose and quantity of each DM needed


1 Select Publication Types
Operator Manual
Sustainment Maintenance Manual
BDAR Manual
2 Content Selection: Select info sets, DM Types, and info codes
Content Selection Matrices are found in MIL-STD-3031 Appendix A
Content requirements applied with equipment details (SNS)
3 Create draft DMRL
DMRL
4 Coordinate, Negotiate, Update
5 Formal DMRL
DMRL
6 CSL template generated
Provided by the vendor at the Government's decision
7 Produce CSDB (DMs/Pubs)
CSDB
Continually updated
Operator Manual
Sustainment Maintenance Manual
CSL

THINGS NEEDED IN THE TECHNICAL MANUAL CONTRACT PACKAGE (TMCP)

- ***Contract Line Item Number (CLIN)***
- ***Statement of Work (SOW)***
  - With references to S1000D and MIL-STD-3031
- ***Contract Data Requirements List (CDRL)***
  - Reference the Project Business Rules (BRs) DID
- ***Document Summary List (DSL)***
- ***Contract Attachments***
  - Content Selection Matrix
  - Draft Data Module Requirements List (DMRL)
  - Functionality Matrix
  - Pre-contract Project Business Rules
- ***Contract clauses***

CONTRACTOR DELIVERABLES RELATED TO S1000D

- **Following is a list of typical CDRL items:**
  - **The final functionality matrix, for an IETP-type TM**
  - **The final content selection matrix**
    - **The final list of all applicable information codes**
    - **The final list of required publications**
  - **The final Data Module Requirements List (DMRL)**
  - **The completed document according to DID (DI-TMSS-81784) (i.e., the final list of all project-specific Business Rules (BRs))**
  - **The final version of the project BREX module**
  - **The source data for the manuals (all the Common Source DataBase (CSDB) objects)**

A Closer Look

Developing Content

Managing Deliverables

- Data Module (DM) metadata in the status section identifies the status of pre-release and production DMs
  - The in-work number indicates the draft version number of a DM
    - This is incremented throughout the development (and change) process whenever a draft DM is modified
  - The issue number indicates the version of a complete (i.e., verified) DM and is assigned after the DM is verified.

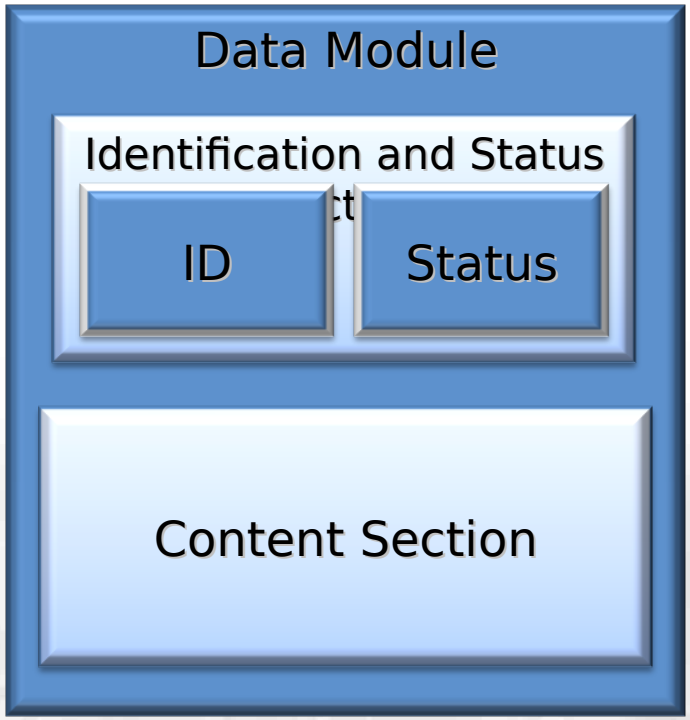
In-Process Reviews

- Only completed Data Modules (DMs) should be reviewed
  - Typically done at 30/60/90 % completion
- A 30% review should not occur when 30% of the total authoring work is done, but rather when 30% of the DMs are complete
- A review of 100% of the DMs that are each 30% complete is fruitless

Exercise 5 – Data Module Structure

- **Describe the function of the identification and status and the Content portions of the Data Module (DM).**

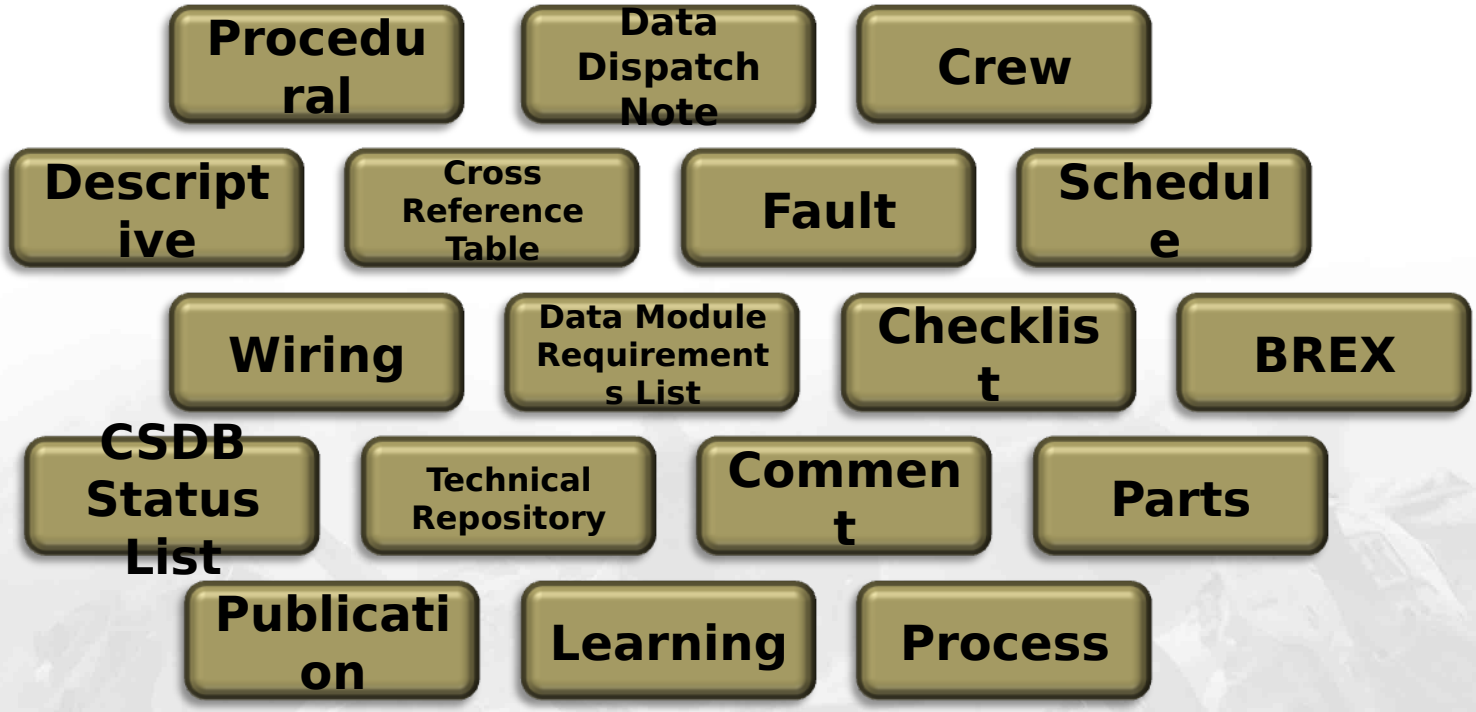
The identification and status section uniquely identifies the DM and manages it in the CSDB. It contains important metadata.



Content section contains the information that is presented to the user (the procedure, topic, etc.)

Exercise 6 – Data Module (DM) Types

- **Of the DM types that define content, which ones do you expect to use most in your work, and why? Are there any you are unlikely to use?**



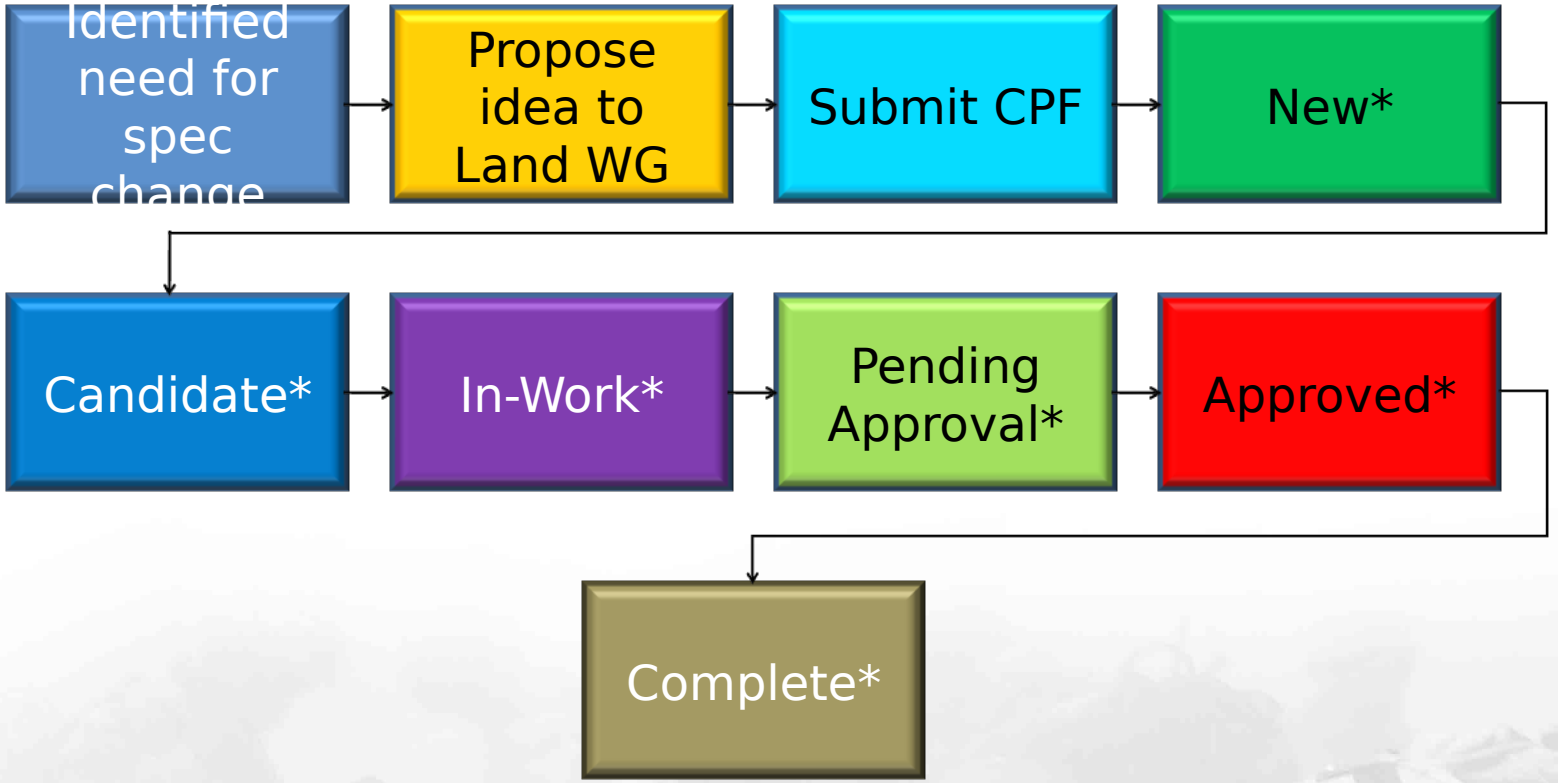
Module 6

REQUESTING A CHANGE

REQUESTING A CHANGE TO S1000D

- **Past and current change proposals to S1000D can be seen on the S1000D site, https://www.s1000d.org or http://s1000d.us. The listing shows every proposed change (accepted or not) and the rationale put forth for making it.**
- **The process for Army submission of a proposed change to S1000D is described in the *Army/Land WG CPF Review Process* (available at https://ussmg.btas.com or http://s1000d.us).**
  - **The process begins with a Land Working Group (Land WG) review of the proposal.**
  - **If approved by the Land WG, the Change Proposal Form (CPF) will be forwarded to the U.S. S1000D Management Group (USSMG) to begin the formal process of U.S. submission.**
- **The S1000D review process is designed to be thorough, because the effects of any change could impact projects worldwide.**

LWG S1000D CHANGE PROPOSAL FORM (CPF) LIFECYCLE



- **CPF owners may request help from LOGSA and/or the Land WG at any stage**

  *** CPF stages (more information may be obtained from http://public.s1000d.org/ChangeProposals/Pages/CPFProcess.aspx)**

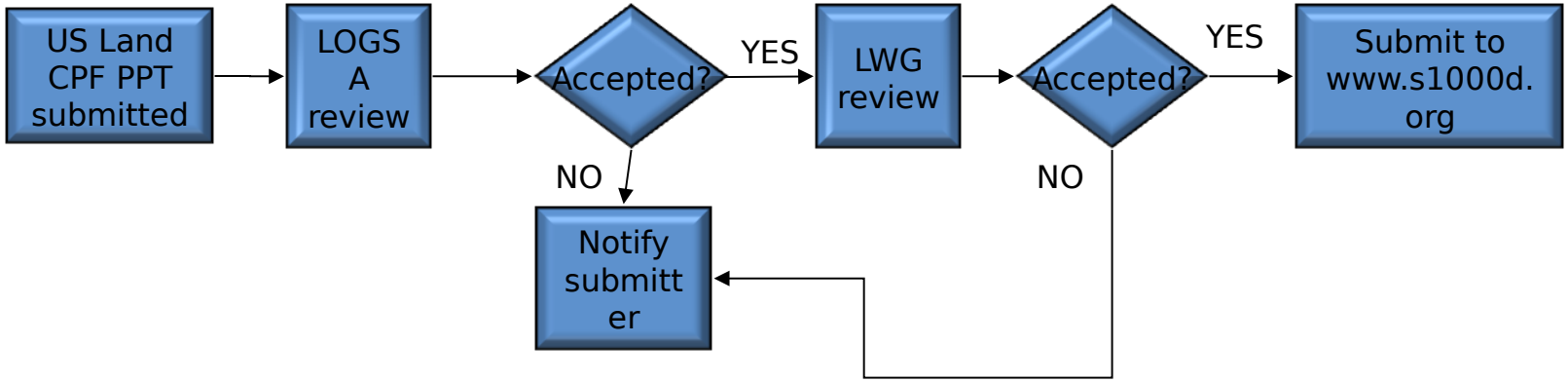
IDENTIFIED NEED FOR SPEC CHANGE

- **Projects may discover a gap or error within S1000D (e.g., a particular part identifier cannot be included or a schema bug is discovered)**
  - **Every effort is made to verify that the narrative and all schemas are correct, but mistakes happen ☺**

PROPOSE IDEA TO LAND WG

- **Land WG requires a briefing which explains the modification and why it is needed**
  - **The briefing should contain enough (background) information for all levels of users to understand**
  - **This briefing content will be used for the white paper which explains the Change Proposal Form (CPF) in more detail**
  - **Once approved by the Land WG, the CPF is then officially submitted through the S1000D site**

PROPOSE IDEA TO LWG



Submitter should use the PowerPoint template to document the intent of their CPF Submit to LOGSA LOGSA will Post to Land WG Web Site	LOGSA will make an initial review for proper format and suitability.	Accepted: The CPF will be included in the next Land WG meeting agenda for official review. Rejected: Notify submitter.	The proposal will be reviewed at a future Land WG meeting.	Accepted: The CPF author will submit the CPF to www.s1000d.org. (The CPF will then be reviewed by the USSMG and Steering Committee.) Rejected: Notify submitter.

SUBMIT CHANGE PROPOSAL FORM (CPF)

- As complete as possible, including:
  - Contact information (complete and current)
    - Update as needed
  - All CPFs will be submitted as “US” CPFs (nation).
  - Organization should be “US Army”
    - Filenames should reflect “US”
- “Location in the specification”
  - Which Issue does the CPF affect?
    - Example, “At Issue: 4.0 Change No: 1” = Issue 4.0.1
  - Locations in the current spec that are affected (chapters, paragraphs, tables, figures, etc.)
    - Every affected chapter must be included

SUBMIT CHANGE PROPOSAL FORM (CPF)

- "Change you think is necessary"
  - A brief statement as to what the needed change is
- "Reason for your change"
  - A brief explanation as to the reason behind your change
- Also, attach a white paper which clearly explains only the business case
  - Refer to "Candidate" for file naming conventions

SUBMIT CHANGE PROPOSAL FORM (CPF)

- After the submission process is complete, you will receive an e-mail containing a link.
  - This link is used for updating your CPF.
    - Tip: Bookmark this link immediately (be sure you organize your bookmarks to easily locate this link and update your CPF).
  - If you cannot find this e-mail or failed to bookmark your link, go to the “Update Proposal” link on s1000d.org and submit your e-mail address requesting the information once again.

NEW

- **Each Change Proposal Form (CPF) is assigned a unique number**
  - **U.S. Army CPFs will include “US” for easy identification after the number**
- **Once the business case is approved (by the steering committee), it progresses to Candidate**

CANDIDATE

- **Update the white paper**
  - **Develop solution(s)**
    - **Several ideas may have been discussed or suggested by the Land WG – include all relevant solutions**
    - **The concept(s) must be accepted before progressing to In-work**
  - **Include the newly assigned number on each document and in each filename**
    - **Change Proposal Form: CPF_20YY-xxxUS_r0_CPFTitle.doc**
    - **White paper: CPF_20YY-xxxUS_a1_r0_CPFTitle.doc**
      - **The white paper should now be at "r1" – 1st revision**
    - **SPF: CPF_20YY-xxxUS_spf_r0_CPFTitle.doc**
      - **YY = current year**
      - **xxx = assigned unique number**
      - **Increment "r0" for each revision**

CANDIDATE

- **Be aware of your Change Proposal Form's (CPF) status!**
- **You are the only one allowed to update attachments or CPF information on the viewer.**
- **All comments must be addressed and tracked in the white paper.**
- **Use the Change Tracking feature in Word**
  - **Many CPFs are reviewed and it is far easier to note the changes than attempt to figure out what those changes are while reading 10 or more additional CPFs**
- **Keep screenshots to a minimum**
  - **Although screenshots are extremely helpful, they can be burdensome to constantly update**
    - **For example, if you provide a screenshot of Schema changes and the changes are not accepted the first time – that screenshot must be updated each time it is reviewed, for the proposed technical solution**

IN-WORK

- **At this stage**
  - **Identify affected chapters and narrative updates (next slide)**
  - **Finalize Schema modifications**
    - **Existing package which contains instructions, blank form, and an example Schema Proposal Form (SPF) (available from http://members.s1000d.org – access is required)**
    - **Completed SPF must have EPWG approval**
  - **Finalize solution(s)**
    - **If necessary, schedule a discussion with the Electronic Publication Working Group (EPWG) for advice and feedback**
    - **If the technical changes are not agreed – the solution must be re-worked until accepted.**
    - **Once solutions are agreed, the white paper is updated (yet again) and all documentation should be completed**
- **Keep the white paper up-to-date**

IN-WORK

- **Several Chapter 7 sub-chapters may be related to your Change Proposal Form (CPF)**
  - **Review each chapter to determine whether or not it is affected by your CPF (e.g., Chap 7.3.1.1).**
  - **Every CPF must clearly include whether or not there are any changes to the following chapters:**
    - **Chap 7.3.1.3 is related to doctype/schema declarations. If invocation is not affected, this chapter is not applicable to the CPF; otherwise, changes which affect either or the flat and master Schemas must be included.**
      - **Example, "This CPF contains no changes which affect the Schema declaration."**
    - **Chap 7.3.1.4 is regarding backwards compatibility. New elements or attributes are not backwards compatible. Renamed, restructured, or moved elements or attributes must be included.**
    - **Chap 7.4.2.1 should include a brief explanation of the CPF changes which affect the Publication Module Schema (pm):**
      - **Example, 2.2.8 Version 4.2**
        - » **CPF 2011-001US:The required new element <superCool> was added within the element <pmStatus>.**

IN-WORK

- **Your CPF cannot progress to “Pending Approval” without the following:**
  - **Complete chapter text**
    - **Any changes to existing text or the addition of new text (included in the white paper)**
  - **Agreed finalized solution(s)**
  - **All comments have been addressed, resolved, and tracked in the white paper**
  - **Schema Proposal Form (SPF) (approved by the Electronic Publication Working Group (EPWG))**
  - **Bike Sample(s)**
    - **The Bike samples are S1000D data modules that contain representative examples for actual use of many S1000D elements and attributes**
    - **Contained in the SPF unless there are significant changes or the Data Module (DM) is new, then it must be a separate document**

PENDING APPROVAL

- **The white paper now includes:**
  - **All agreed solutions**
  - **All chapter text for each affected chapter**
  - **All resolved comments**
- **Attachments also include, if applicable:**
  - **Schema changes (Electronic Publication Working Group (EPWG)-approved Schema Proposal Form (SPF))**
  - **Bike sample(s) changes**
  - **BREX changes**
- **This is now considered a complete package**

APPROVED

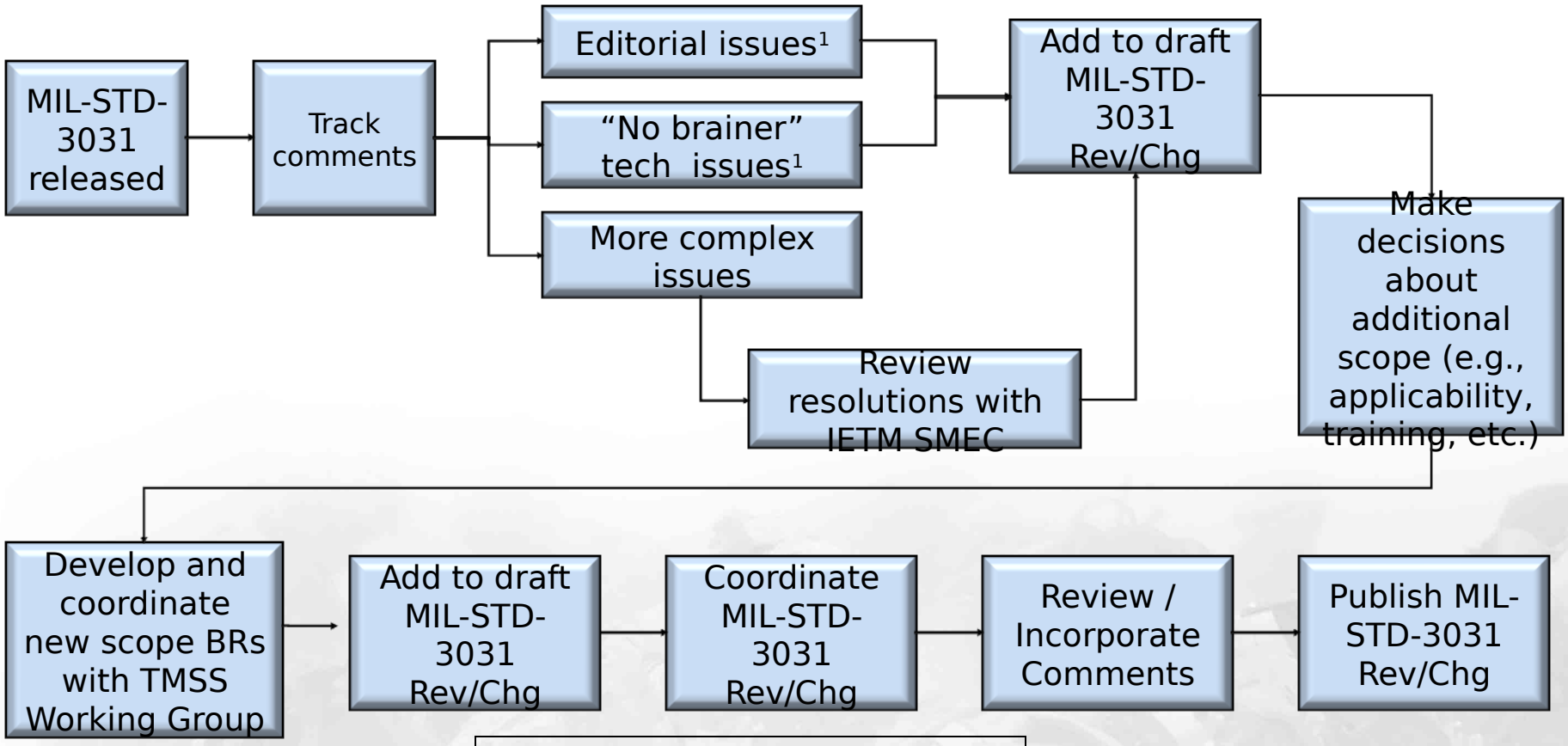
- **Change Proposal Form (CPF) work is complete**
  - **Review Schema and affected chapters to verify changes were incorporated as intended**
    - **CPF author is required to be a part of the chapter authoring team for the next issue for all affected chapters**

COMPLETE

CONGRATULATIONS, YOUR CHANGE PROPOSAL FORM (CPF) HAS BEEN INCORPORATED INTO S1000D!

SIT BACK AND RELAX!

MIL-STD-3031 CHANGE PROCESS



NOTES:
[1] Reviewed and confirmed by LOGSA

REFERENCES

- **Web sites of interest:**
  - LOGSA S1000D information:
    - **https://www.logsa.army.mil/mil40051/S1000D.cfm**
  - S1000D
    - **http://www.s1000d.org**
  - United Stated S1000D Management Group (USSMG)
    - **https://www.s1000d.org or**
    - **http://s1000d.us**
  - NATO Maintenance and Supply Agency (NAMSA)
    - **http://www.namsa.nato.int/s2000m/s2000m_moi14_e.htm**
  - Federal Supply Codes (FSC)
    - **https://www.drms.dla.mil/asset/fsclist.html**

REMEMBER!

S1000D is an alternative to MIL-STD-40051 and is not mandatory.

If you choose to use S1000D based on your business case, you must also use MIL-STD-3031.

POINTS OF CONTACT

- **Questions related to MIL-STD-3031 or DI-TMSS-81784 should be sent through your EPCO to:**
  - Rebecca Armstrong, DSN 645-0854 or COM 256-955-0854, E-Mail: rebecca.armstrong@us.army.mil
- **Stylesheet questions should be sent through your EPCO to:**
  - Tracy Grindrod, DSN 645-0361 or COM 256-955-0361, E-Mail: tracy.grindrod@conus.army.mil
- **We also have a TMSS mailbox for any questions related to publications:**
  - logsa.tmss@conus.army.mil